MARCH, 1928
MONTHLY No. 266

HITCHCOCK'S
MACHINE TOOL
BLUE BOOK

DIRECT MAIL ADVERTISING
to
Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments
AND ALL OTHER
MACHINE TOOL
USERS

Controlled Circulation
25,000 Monthly

Published By
HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO

This motor~ *isn't afraid of dirt*

You can put this motor to work without worry about its surroundings. Dirt can't get in. Maintenance will be less and the motor will last longer because it is always clean inside.

The Reliance method of fully enclosing with fan cooling gives protection to the motor windings with low cost. The size of the motor in most cases is no greater than an open motor of the same rating.

No pipes. No complicated construction.

Bulletin 102 gives details.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Philadelphia; Pittsburgh; Cincinnati; Detroit; Buffalo; Chicago; Birmingham

RELIANCE AC DC MOTORS
with Ball Bearings

To Manufacturers of Machine Tools and Shop Equipment

There are many concerns in this country who need your machines and have the money to buy them.

Some of them do not know what you make, and most of them are more or less hazy as to just what your machines will do for them.

You can tell them about it in the pages of this publication. Then they will know. And they never will buy until they do know.

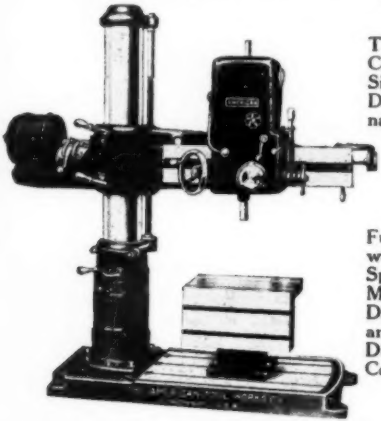
With its 25,000 carefully controlled circulation, the *Blue Book* will describe your machines to more good concerns—thousands more—than any or all other trade media, and at lowest cost.

Don't delay. It's too costly in the loss of sales opportunities. Let the *Blue Book* do your broadcasting to those who don't know, but should know, about the machines you make and what they will do.

Better write today to Hitchcock Publishing Co., 508 S. Dearborn St., Chicago, for further details.

Radial Drilling—

At 2,000 R. P. M.



This shows our Constant Speed Simplified Motor Drive for Alternating Current.

Furnished also with Adjustable Speed Simplified Motor Drive for Direct Current and for Belt Drive thru 4-Step Cone Pulley.

American Maxi-Speed Sensitive Radial

While replacing your "good-enough-for-its-time" equipment with modern high-production tools, do not fail to include in your investigation the new American Maxi-Speed Sensitive Radial.

It combines the convenience and range of the radial with the speed and efficiency of the sensitive. Its dominant features are power, speed and convenience. It drills and taps holes up to 1 in. diameter faster, better and cheaper than ever done before.

Let us help you solve your drilling problems
Glad to be of service, and you'll not be obligated

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

LATHES **RADIALS** **SHAPERS**

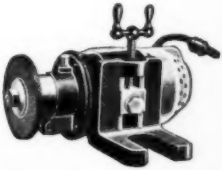
HISEY PRECISION GRINDERS

Tool Post — Angle Plate Combination External-Internal

Are quickly and easily applied to any machine tool. They enable you to handle external and internal grinding jobs to any required degree of precision. The saving involved in grinding with the original set up, and the number of operations that can be handled more profitably with these grinders is surprising.

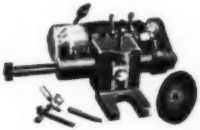
Tool Post Grinders

Made with and without horizontal slide in ¼ and ½ H. P. Sizes.



Angle Plate Grinders

Made in ¼, ½, 1, 2, 3, 5 and 7½ H. P. For Vertical Grinding made in 1, 2, and 5 H. P.



Combination External and Internal Grinders

The internal spindle can be removed and grinder can be made into an external grinder as shown above. Open type spindle as shown made in ¼ H. P.

Combination External-Internal Grinder

With enclosed type spindle made in ½ and 1 H. P.

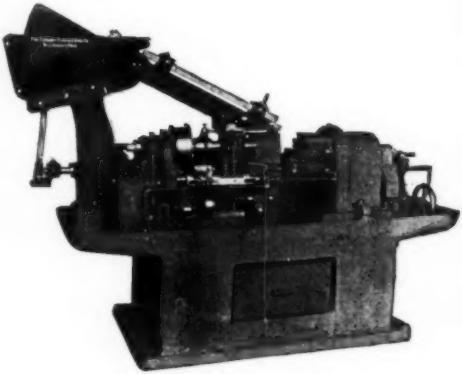
Write for Catalog H35

The Hisey-Wolf Machine Co.

Manufacturers of Quality Electric Drills, Grinders and Buffers

Cincinnati, Ohio

Authorized Distributors Everywhere



Economy Automatic Combined
Pointing and Threading Machines

REDUCE BOLT COSTS

THE ECONOMY ENGINEERING

WHY ?

1st—One Man Runs Four Machines.

2nd—Machines Full Automatic—Eliminates Human Element.

3rd—Pointing Operation Free.

4th—Saves Handling From Pointer to Threader.

RESULT

Increased Profit for Manufacturer

COMPANY, - Willoughby, Ohio

Cut!
Don't
Scrape
Use
SIMONDS
FILES
Simonds

Any Old File Won't Do!

YOU and every other seasoned buyer or user of Files know that any old file won't do.

To put a perfect edge on the tempered teeth of circular saws with a cheap file is a hard job. It's just as hard for the mechanic out in the shop to file true with a tool that has irregularities in its surface, poorly formed teeth, or any one of a dozen common file faults. Except on the roughest kind of work it always pays to use quality Files—

SIMONDS FILES

the kind that cut easy and last a long time.

Sold By Leading Dealers

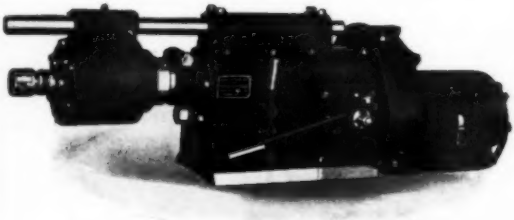
Simonds Saw and Steel Co.

Established 1832

Fitchburg, Mass.

BRADFORD

Unit Type Drill Heads — Also Tapping Heads



No. 1 Tapping Head with 6 inch stroke

A self contained motor driven unit designed for one or more heads to be built into one unit at ***any angle*** from ***horizontal to vertical.***

Capacity of Drill Heads with 3" or 6" stroke, ¼" to 1⅛" in steel.

Capacity of Tapping Heads with 3" or 6" stroke, from 0 to 1" in steel.

Spindle speeds from 75 to 2000 R. P. M.

Heads made for single and multiple spindle drilling.

A Trial Will Convince You

The BRADFORD MACH

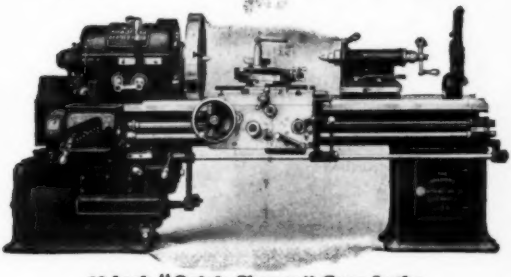
CINCINNATI, *Establish*

BRADFORD

"All Geared"

LATHES

Single Pulley or Motor Drive with Apron Control



18 Inch "Quick Change" Gear Lathe

BRADFORD "All Geared" LATHES have tremendous power, yet are practically vibrationless even when pushed to the limit. Tooth and chatter marks are absent. Every strain tendency in the head is ***downward,*** drive is from beneath, tool thrust locks head tighter to bed. Force feed lubrication which distributes a measured quantity of FRESH oil to 33 surfaces can be furnished.

Made in sizes 14" to 48"

We also manufacture high grade Cone Type Lathes in sizes from 14—48 inches, and special production machinery.

Write Us Today for Complete Information

INE TOOL COMPANY

ed 1840 **OHIO, U. S. A.**

Designed for High Speed Work

Ready for the Job

C-O 14-inch High-Speed Sliding Head Sensitive Drill

3,400 to 10,000 R. P. M.

More Holes per Hour!

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, ⅝".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck to base table, 10½".
Size of base table, 9½"x12½".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼-3"x1¼" face.
Bench space, 15"x20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

Ready for the Job

3 Spindle Speeds
720-1430-3000 R. P. M.

Completely Motorized—Also Furnished Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, 1½" endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

All Around Efficiency

is embodied in the CLEVELAND OPENSIDE PLANER. It contains fewer parts, hence has greater rigidity, cuts more accurately and has a longer life. The entire driving and operating mechanism can be reached from ***one position,*** which saves extra steps and conserves the operator's energy. If you want to increase production and eliminate waste in your shop—install a CLEVELAND.

26 in. to 72 in.

The Cleveland Planer Company

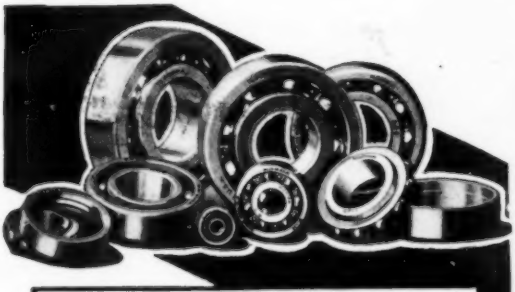
Established 1900

3148 Superior Ave., Cleveland, Ohio

Over 1100 Installatians

Send for Descriptive Folder

The Open Side Planer with the Column Base Cast Integral with Its Closed Top Bed.



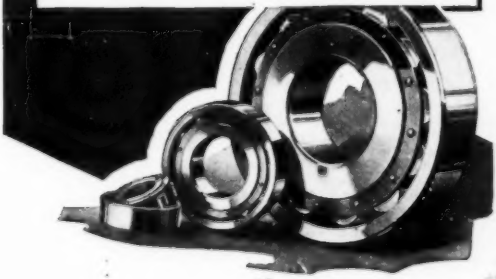
NORMA-HOFFMANN

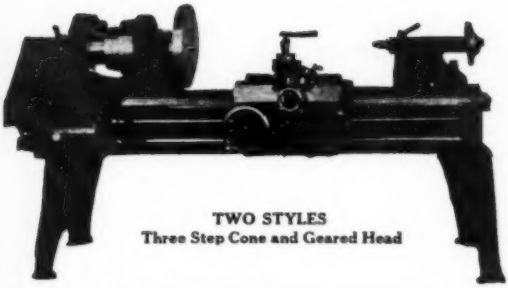
PRECISION Ball and Roller Bearings, built to meet the exacting requirements of those with whom dependable bearing performance is the one conclusive measure of bearing value.

Catalogs 904, 905, and 917

Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.

PRECISION BEARINGS





TWO STYLES
Three Step Cone and Geared Head

16"x6' New Design **$525.00**
Weight 1900 lbs.

18"x8' New Design **$585.00**
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the INEXPENSIVE class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

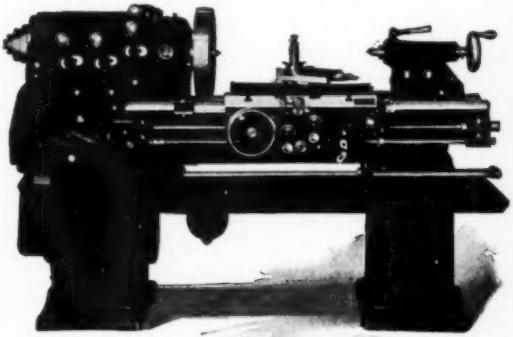
Made in 16" and 18" swing from 6' to 18' length of bed. Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

Write us for full information and PRICES

The Rahn-Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO

The Monarch Ball Bearing Helical Geared Head Lathe

Silent—Smooth—Powerful



Three and one-half teeth of the oil-hardened helical gears are always in mesh.

There is a noiseless, smooth, constant transmission of power, with higher spindle speeds than are possible through any system of spur gearing.

The result is greater production.

Write for complete description of Monarch Helical Geared Head Lathes from 14 to 30 in., with 5 ft. to 30 ft. beds. The folder describes many other modern features, including unusual ease of operation.

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

Accurate—Rapid

Shaping and Slotting with the RHODES

The Rhodes Combination 7" Horizontal Shaper and 3½" Vertical Slotter—two machines in one—is a paying investment from the start. A few turns of a wrench converts the Rhodes into either an efficient shaper or a fast, accurate slotter.

It will do keyseating, shaping, slotting, die making and intricate work of many kinds *with only one set-up of the work*, and, within its range, will exceed the capacities of larger and more expensive single operation machines. The costs of maintenance and operation, of course, are substantially less. It will pay you to investigate.

Ask your dealer or write for CATALOG H22

The Rhodes Mfg. Company

944 Park Road, -:- Hartford, Conn.

"The Handiest Tool in the Shop"

7 in. Shaper Stroke

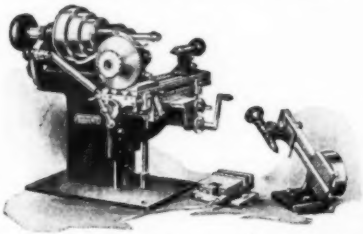
3½ in. Slotter Stroke

SHAPERS—RHODES—SLOTTERS

HARDINGE

Supreme Quality

Has been built into the Cataract Bench Miller



YOU WILL FIND Cataracts ideal machines where production is demanded at minimum cost. Their speed, accuracy and adaptability is such that they invariably increase output.

Beside their wide range of feeds, they have independent steel indexes graduated to read to thousandths of an inch. They are equally well adapted to the demands of the lighter tool room, mixed or production work.

On request we will mail you full details and the moderate price

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

FOOTBURT

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

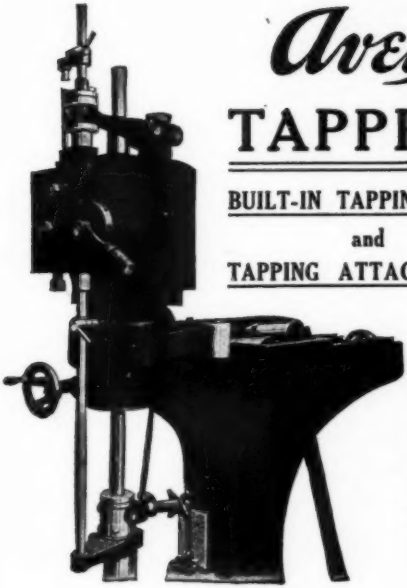
More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT



Avey TAPPERS

BUILT-IN TAPPING UNITS
and
TAPPING ATTACHMENTS

Sizes and Types For All Holes Up To 1½ Inch In Cast Iron

AVEY Tappers reach the peak of tapping efficiency Their speed, smooth positive operation, and capacity for continuous production of perfect tapped holes under severest conditions assure lowest possible cost for each hole tapped.

Let us send you our Special Bulletins describing our complete line of Tappers

The Avey Drilling Machine Co.

CINCINNATI

Threading 1200 pieces per Hour

These brass wing screws shown are being threaded on our

Standard High Speed Tapping Machine

Let us show you what can be done on your work

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

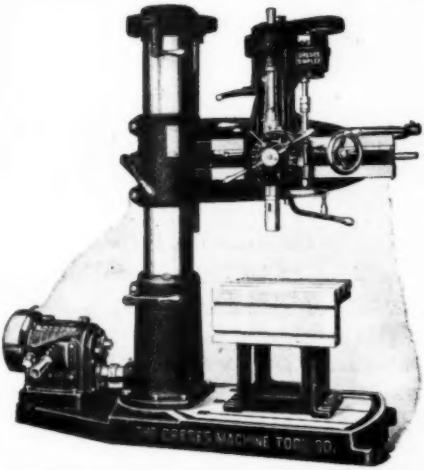
BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

AGENTS

Hendrie & Bolthoff — Denver
F. E. Satterlee Company — Minneapolis
Colcord-Wright Mchy. & Supply Co. — St. Louis
Herberts Machinery & Supply Co. — Los Angeles, San Francisco
F. F. Barber Machinery Co. — Toronto

LELAND-GIFFORD

Solve Your Hole Problem



With a DRESES-SIMPLEX RADIAL

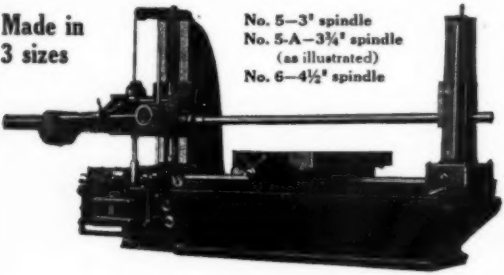
We also build a complete line of Multi Duty Ball Bearing Radial Drills.

The Dreses Machine Tool Co.

CINCINNATI, OHIO

Insures Production and Precision

Made in 3 sizes



Defiance No. 5-A

Horizontal Boring, Milling, Drilling, and Tapping Machine

You cannot meet today's production demands nor keep costs within reason by using obsolete equipment.

Meeting TODAY'S Requirements

The machine illustrated above is made to meet the requirements of intensive production and precision. Objectionable features such as complication and inaccessability have been eliminated. The speed and feed mechanisms and the contents of the spindle housing are of unit construction—each unit affording complete access without disturbing parts of other units. Many other modern improvements have been added, and we should like to tell you about them.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works

Defiance, Ohio

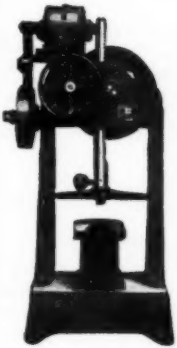
Designers and Builders of Precision-Production Machine Tools and Special Woodworking Machinery

KEEN COMPETITION DEMANDS EFFICIENT MACHINE TOOLS

Replace the sledge hammer for drive fit work.

It cannot compete with the

Lucas Power Forcing Press



The BELT does the work and SAVES the workman's TIME and ENERGY for better use.

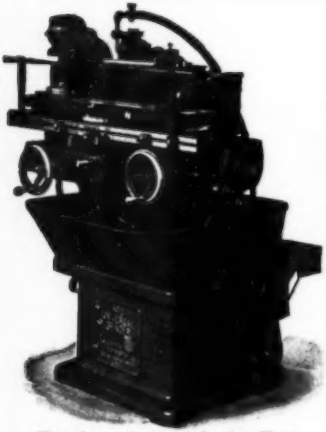
We also make the
LUCAS "PRECISION"
Horizontal Boring, Drilling and Milling Machine

The Lucas Machine Tool Co.

521 East 99th Street, Cleveland, Ohio

Grand Rapids UNIVERSAL Cutter & Tool Grinders

With Self-Contained Motor Drive



Motor Driven No. 3, with Guards in Place

Our Nos. 3 & 4 Universal Cutter and Tool Grinders are superlatively high-grade machines.

Furnished **either** hand or power feed, wet or dry, motor or belt drive.

Our Nos. 1 & 2 are smaller sizes.

GRAND RAPIDS Universal Cutter and Tool Grinders Nos. 3 and 4 are duplicates excepting in the length of table and the longitudinal movement. They are superlatively high grade, designed for those who want the economy of the best. For detailed description write for the Bulletin.

WE HAVE FOUR separate illustrated descriptive Grinder Bulletins, covering *"Universal Cutter and Tool Grinders Nos. 3 and 4"*, *"Universal Cutter and Tool Grinders Nos. 1 and 2,"* *"Grand Rapids Drill Grinders,"* and *"Grand Rapids Tap Grinders."* We suggest that you write today for the Bulletin or Bulletins in which you may be interested.

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., GRAND RAPIDS, MICH.

GRINDING WHEELS

Under our process we can make and ship a wheel in 3 DAYS.

QUICK DELIVERIES

We are in position to make quick deliveries on certain sizes of standard straight side wheels, ranging from

8" x ½"—To—30" x 6"
at attractive prices

We also specialize in Centerless Wheels

Tell us what your work is and what wheels you are using

The
Cincinnati Abrasive Wheel Co.
CINCINNATI

GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

Fully automatic—does not require skilled labor to produce satisfactory work at a greatly increased production rate without tap breakage. Send for circular giving complete details.

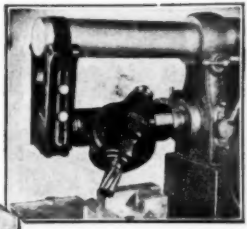
Send samples or blue print. Our engineering department will be pleased to quote guaranteed production estimates and prices.

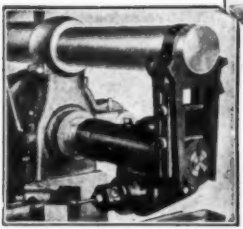
For lighter Tapping Equipment write for literature "LET AIR DO IT."

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.

AT ANY ANGLE IN ANY PLANE

Porter-Cable Milling Attachments





Reduce Costly Set-Ups On Your Work

As it is easier to move the cutter than the work, they will save you money and speed up production.

Send for our free Milling Attachment Booklet. Just out. It might solve your problem.

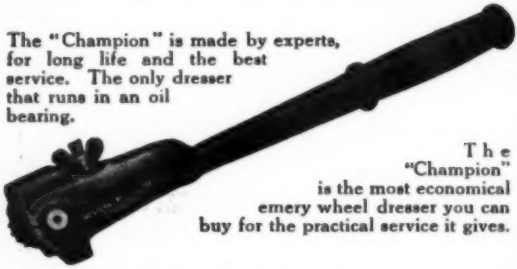
Porter - Cable Machine Co.

Salina St., Syracuse, N. Y.

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The "Champion" is the most economical emery wheel dresser you can buy for the practical service it gives.

The ***cutters*** are made of a special steel, heat-treated and tempered by a special process.

The ***sleeve,*** furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented ***spindle bearing,*** which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

The patented ***handle*** is heavy and strong, designed for long service, efficiency and economy.

The patented ***handle cap*** eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.

SPRINGFIELD, OHIO

PEERLESS
SURFACING MACHINES
for
Grinding and Finishing
Flat Work

4' Bench Model

Larger Machines in Both Horizontal and Vertical Styles

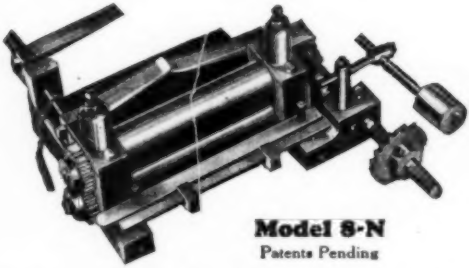
SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.

Automatic Reversable

ROLL FEED

For Any Punch Press



Model 8-N
Patents Pending

A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

PRICE $195.00 F. O. B. Chicago

Wittek Manufacturing Co.

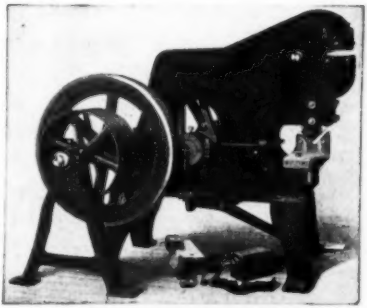
DEPT. 3

2532 So. Kedzie Ave., Chicago, Ill.

Punches—Shears—Bending Rolls

The Beloit

Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56

Direct connected motor or belt drive

This is the best all around punch and shear in a combined machine of moderate cost. It is heavy and substantial, and amply back geared to require the minimum amount of power; is strong, compact, and easy to operate. Can be equipped with angle shearing attachment, architectural jaw, or for special work.

We make a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls.

We do not overrate the capacity of our machines.

Write for catalog and prices.

Hendley & Whittemore Co.

100 S. State St., Beloit, Wis.

Strand

New Type Machine
For
Rotary Filing Grinding and Polishing

Type RF-M 4. ¼ H. P.

For
Die Makers
And
All Kinds of Metal Finishing
Of
Various Shapes and Sizes
A Machine—
For
Many Purposes

Attach to the Lighting Circuit

Attachments

EQUIPMENT

Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

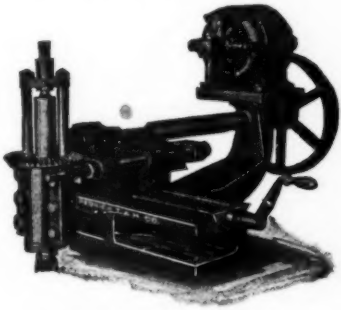
Machine Complete as Illustrated

N. A. STRAND & CO.
Manufacturers
5001 No. Lincoln Street
CHICAGO

Without a **Pedrick**

Portable Milling Machine

You Often Pay Its Price
In Delay On One Job



To appreciate its value just add the savings you could effect in a year by taking this handy, ever-ready tool to the job instead of bringing the job to the tool, then subtract the price. Result—net earning power.

You need this Pedrick Miller to do those big jobs that your standard machines cannot handle.

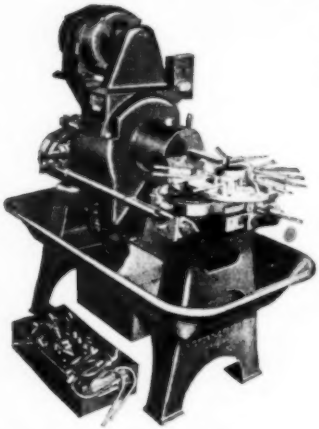
Catalogue explains all its various operations—a comprehensive book of reference and key to manifold savings. Your copy is waiting—shall we send it now?

Pedrick Tool & Machine Co.

Headquarters for Portable Machine Tools
Boring Bars, Crank Pin Turners, Pipe Benders, etc.

3644 N. Lawrence St., Philadelphia, Pa.

"Thread It Separately"



That's the Modern Way Up-to-Date Plants are Saving Money

The Machine to Use?

The

Rickert-Shafer Automatic Single-Purpose Threading Machine

Production time on automatics is always governed by the time of the longest operation—threading. To get more out of expensive automatics the trend in modern plants is to do the threading on low-priced single machines. To cover this field we have designed a full line of Rickert-Shafer Threading and Second Operation Machines, made in single and double spindles—magazine, hopper or hand feed. Adaptable to almost every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading and with but one chucking.

Send for complete details, or estimates of your work threaded on one of these machines

RICKERT-SHAFER CO., Erie, Penna.

Edlund Drilling Machines

Keep Costs Down

You will rarely find Edlund's name entered on maintenance record cards. Even in the grind of intensive production they run smoothly — producing operating hour after operating hour of satisfactory work.

One of the Newest

—the No. 2 B Column Type

is an easy running—sensitive accurate drill. It is equipped by special methods of power transmission—vibration elimination—friction minimizing and speed regulation—to fill the demands of modern production more profitably.

Let us mail you full mechanical details

Edlund Mchy. Co., Inc.

CORTLAND, NEW YORK

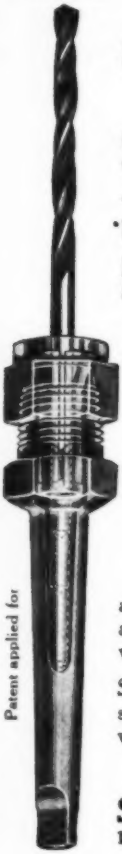
Put your drilling problems up to us

REMEMBER—
Edlund for drilling economy.

Use Broken Drills

Save New Drills in

Save-drill Chucks



Patent applied for

They will hold ***Either End*** of any broken drill long enough to use.

New drills may be ***pushed back into the hollow shank*** with only the amount protruding actually needed for drilling, often increasing your drill's life 300% to 400%.

The chucks are very compact for close multiple or inside drilling. They will turn 5/16" and smaller drills in 1" circle, large sizes in proportion.

Price with 4 collets, $5.00 and up

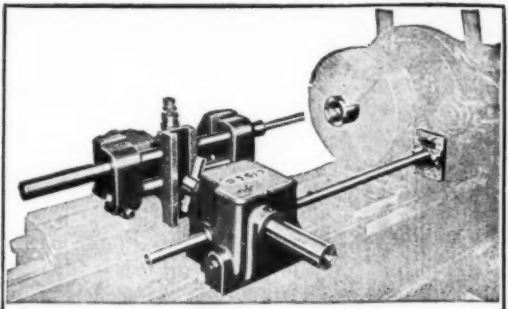
TRY ONE FREE

and if you are not satisfied with your actual savings in a month, return it without obligation.

Specify size of shank and whether straight or tapered and size of collets wanted.

MADE IN ALL SIZES

Sandusky Nut Company
122 Lawrence Street, Sandusky, Ohio



The Cisco Universal Oil Grooving Attachment

With the ***Cisco Oil Grooving Attachment,*** it is possible to cut a single figure eight oil groove in a bushing 2" bore x4" long, two per minute. Compare this with the old hand method of chipping oil grooves.

Not only that, but the figure eight groove is considered by mechanical engineers, by far the best type of oil groove for lubricating bearings or shafts.

The ***Cisco Universal Oil Grooving Attachment*** is readily attachable to any make of lathe from 14" to 24" inclusive. It cuts single, double, triple, or quardruple oil grooves, of the figure eight type, inside and outside of the bearing. The depth of the groove is controlled by the operator. The diameter of the work ranges from, ⅝" to the maximum capacity of the lathe used. Made in three maximum lengths of 6", 9", and 12", it is adaptable to a great variety of work.

WRITE FOR DETAILS

The Cisco Machine Tool Co.

1700 Elmore Street, Cincinnati, Ohio

DANLY Die Sets

and die makers' supplies

Carried in stock, at all Danly warehouses, 15 types and 188 sizes of Danly die sets . . completely assembled, ready for immediate use.

You can order from the Danly Catalogue, as easily as writing out a requisition on your own stock room.

Also carried in stock, dowel pins, leader pins and bushings, pry bars, clamps, cap and set screws, pressure pad, knockout and stripper plate springs; laps; stripper bolts . . . complete line of die makers' accessories.

Send for your copy of the new catalogue, just off the press. This is invaluable and indispensible. No obligation.

Danly Machine Specialties, Inc.

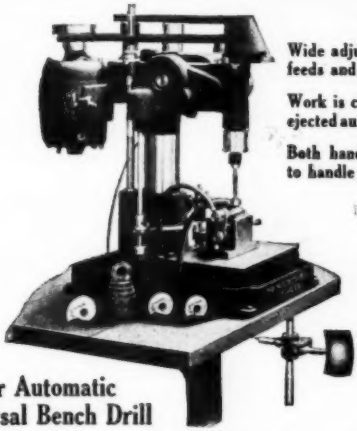
2116 So. 52nd Ave., Chicago, Ill.

Detroit, Mich.
1537 Temple Ave.

DANLY STANDARD

Long Island City, N. Y.
36-12 34th St.

For Large Production Drilling In Small Parts of Varied Shapes



Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

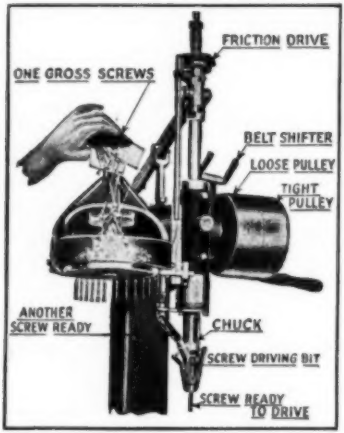
The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such ***a remarkable producer at bed-rock cost.***

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled

The Chas. Stecher Co., 2452 N. Greenview Ave., CHICAGO, ILLINOIS

Magazine-Feed Reynolds Drives MORE Screws at LESS COST



Showing Magazine Feed of the Reynolds Automatic

SPEED—As the magazine feed of the Reynolds permits the operator to use both hands in handling work, production is many times greater—up to 2,000 screws per hour may be driven.

BETTER WORK—Every screw is firmly imbedded and driven so accurately that many users have been able to reduce the number and sizes of their screws.

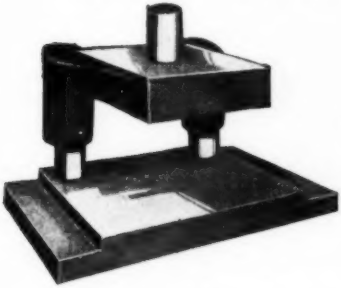
LOW COST—Users of the Reynolds report actual savings of from 65 to 85%. Many have found that it has *paid for itself* in THREE MONTHS!

Drop us a line, giving dimensions over all of your work and length and gauge of screws used. We'll send facts and figures that may surprise you.

The Reynolds Machine Company

Dept. H. H., Massillon, Ohio

U. S. Tool Offers A New Steel Base Sub-Press



No More Costly than Iron-Base Sub-Presses

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

ABSOLUTE INTERCHANGEABILITY—Any top fits any base, a positive assurance of precision.

HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

COST—No more than ordinary cast base sub-presses.

SEND FOR CATALOG

U. S. Tool Company, Inc.

AMPERE, N. J.

There is a Difference where you

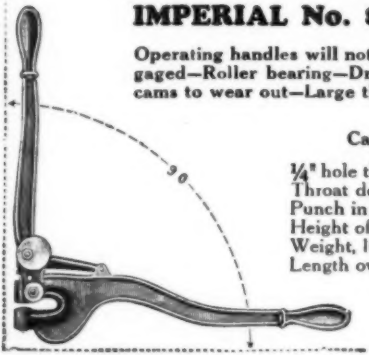
ORIGINATORS WORLD'S LARGEST BALL BEARING PUNCH AND SHEAR MANUFACTURERS

Buy Your PUNCHES and DIES

Be Sure the Letter W Is on All Your

PUNCHES AND DIES

They Are Made In Our Own Factory and Are Genuine



IMPERIAL No. 8 PUNCH

Operating handles will not become disengaged—Roller bearing—Drop Forged—No cams to wear out—Large throat clearance

Capacity:

¼" hole through ¼" iron.
Throat depth 2⅛".
Punch in center 4¼".
Height of gap ⅜".
Weight, 16 lbs.
Length over all, 25½".

Just right for standing seams or sky-light work.

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL CO.

95 Forbes Street, Rockford, Ill.

DRILL VISE

With and Without Jig Attachments

Made in Three Sizes, Jaws, 6', 9' and 12' Long

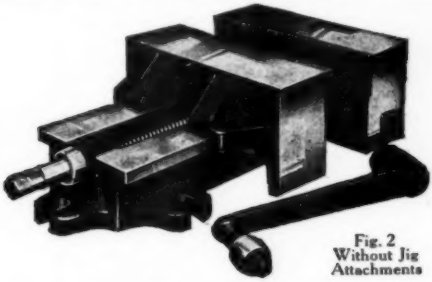


Fig. 2
Without Jig
Attachments

Always a good vise for general shop use on driller, miller, shaper, or planer, and at the same time holds work for duplicate drilling without the cost of a jig.

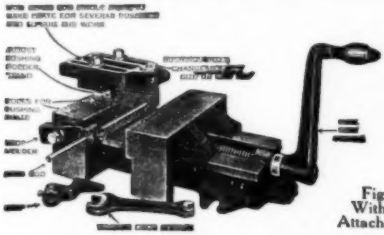


Fig. 1
With Jig
Attachments

Any Vise will pay. More time is lost in catching work than in doing the actual Drilling.

Circulars and Discounts

THE GRAHAM MFG. CO.

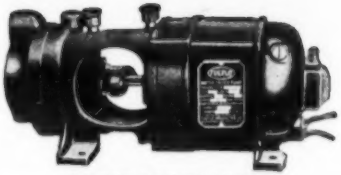
73 Willard Avenue **PROVIDENCE, R. I.**

Great Britain—Richard Lloyd & Co., Ltd., Birmingham
France, Italy, Switzerland, Spain and Holland—Fenwick Freres & Co.
Germany—A. Kayser, Oranienstrasse, 126, Berlin

GRINDER PUMP

FULFLO

VOLUME PUMPS



MOTOR DRIVEN UNITS
⅛ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

New Model B-L "GUSHER"

Reversible Belt Driven Pumps

Free of complications

No gears

No foot or relief valves

No packing nuts

No priming

Delivers 53 gallons per minute at a 4-ft. head at 400 R.P.M.

—

Model T-L delivers 22 gallons.

SIMPLICITY is the keynote of excellence, especially in mechanics.

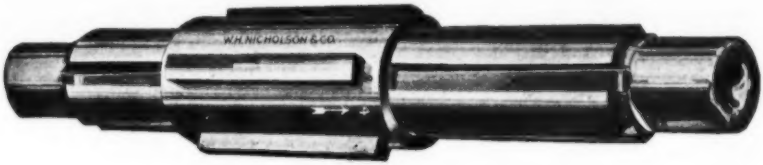
"GUSHERS" are the simplest lubricant pumps made.

AN OIL WINDOW makes lubrication visible in Model B-L. Other features are—deep grooved ball bearings; automatic oiling; sufficient clearance for passing small chips and abrasive matter; an instant and easy flow, free from air bubbles and pulsations; highest efficiency, and unusual wearing qualities.

Write for complete Catalog of "Gushers," with facilities from 12 to 75 gallons per minute, belt or motor drive

The Ruthman Machinery Co.

528-534 E. Front St., Cincinnati, Ohio

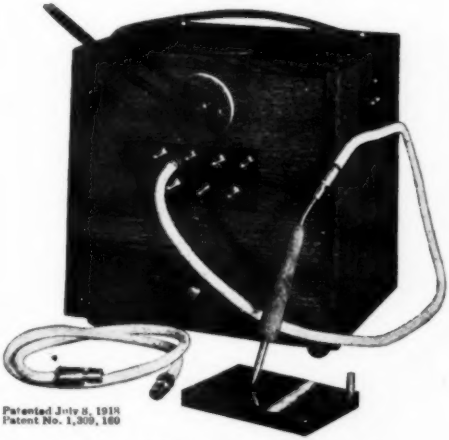


FOR THIRTY YEARS the railroad shops all over the country have continued to buy these time-saving expanding mandrels. If you have n't used them, write us and we will send any size on trial.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,309,160

Six Stages of Heat

Enable the user of the ETCHOGRAPH to obtain six variations in the size of marking—an advantage no other machine can offer. Ideal for writing or marking on iron, steel or steelite. No fuss—easy to operate. Just plug in at the nearest lamp socket and write as you would with a pencil. No acids, no elaborate preparations—thereby affording an 80% saving in time alone. Full information gladly sent upon request.

Write for descriptive folder, stating power available.

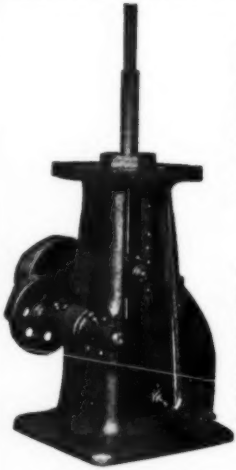
William Brewster Company
50 Church St., New York

Simplicity—

Keynote of the Catlin Keyseater

With less than half the number of parts of other keyseaters, Catlins are proportionately simpler machines to operate. Any average mechanic can produce top-notch results with a Catlin.

They have been found thoroly successful in automobile plants, government shops, navy yards and many big factories, both at home and abroad.



The machine shown here takes care of the needs of most machine shops. The stroke is adjustable up to 13", and it cuts keyseats from 1/16" to 1½". Our other sizes will do all the keyseating that may come up in any shop or ship yard.

Economy

On some classes of work it is possible to keyseat piece after piece without clamping down the work, or stopping the machine.

Catlins are making new records right along—why not have them save time and money in your shop?

Let us mail you the interesting folder, describing the various sizes, including their capacities

Chattanooga Machinery Company

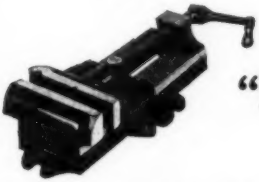
2401 Bennett Ave., Chattanooga, Tenn.

The "BB" Upright Drill

WE have taken over the stock of 20" Upright Drills of a manufacturer of good standing who will continue to make this product for us under the name of the "BB" Drill.

These 20" Drills have power feed and back gears, are very powerful, accurately made and well finished. An opportunity to get an excellent Drill at a very low price.

Priced at Only $133. **Arranged for Motor Drive $144.**



The "BB" Machine Vise

For Use on Miller, Shaper, Planer or Drill

The top, bottom and sides are accurately machined after assembly. Well made throughout of good material. Will stand up under hard use.

No well equipped shop is complete without this modern vise. Opens 6 inches, weights 37 pounds.

Price Only $18.00

A. R. Marsh Machinery Company

4900 West 73rd St., Cleveland, Ohio

Genesee Hollow Mills

With Adjustable Replaceable Blades Are Productive, Accurate, Economical

PRODUCTIVE—because their seven sizes cover the entire range from 1/8" to 2", and machine all sizes within their capacity to 1000ths of an inch.

ACCURATE—because the hollow mills cannot change in size or clog with chips as do solid tools. They can be ground to any angle required to point work or turn sharp tapers.

ECONOMICAL to buy, because one Genesee Hollow Mill covers several sizes—economical in upkeep, because they outlast from five to seven ordinary tools; then too the blades are replaceable at a small cost—economical in operation, because they give a maximum efficiency, cutting up to 15" a minute in steel, or to capacity of machine.

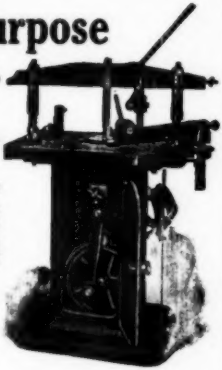
Send for detailed information

Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

Davis All-Purpose Keyseater

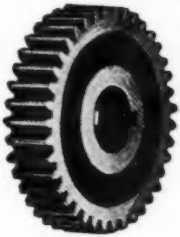


From the largest, to the smallest keyseating job, the DAVIS can be set up quickly for each item of a run of mixed work.

And a Satisfactory Job

The Cutter

In sizes from 1/16 to 1-inch



Cuts keyways in pulleys, gearblanks, bell cranks, crank handles, etc.; does slotting & oil grooving.

Two sizes. Write for folder, with table of cutting time.

Davis Keyseater Company

255½ Mill Street, Rochester, N. Y., U. S. A.

SHUR-GRIP

Solder Iron Handles

Screw On and
STAY ON

STAYS COOL
CAN'T SPLIT

Patented April 24, 1923—No. 1,453,082

CAN'T COME OFF — WON'T BURN

Will Outlast a Dozen Ordinary Solder Iron Handles

Showing inside construction of the SHUR-GRIP. The heat escapes through the hole in the direction indicated by arrows.

MADE IN THREE SIZES:

No. 7 for stem 3/8" to 1/2" dia. (Generally 1½ to 4 lb. irons).

No. 8 for stem 1/2" to 5/8" dia. (Generally 4 to 8 lb. irons).

No. 9 for stem 5/8" to 3/4" dia. (Generally 8 to 12 lb. irons).

Carried in stock by Leading Jobbers

HYRO MFG. CO., Inc.

200 Varick St.

HYRO PRODUCTS

New York N. Y.

"Speed Up Production"

Luma
ELECTRIC EQUIPMENT
TOLEDO, OHIO

Guaranteed fool-proof and durable.

Used on A. C. light circuit.

View of Etching Pencil Marking and Demagnetizing in same operation.

Luma Combination Electric Etching and Demagnetizing Instrument

Easy to use as a lead pencil

A time and labor saving tool that functions equally well permanently marking expensive high speed steel tools and demagnetizing large or small ones.

Always instantly ready without fuss or muss.

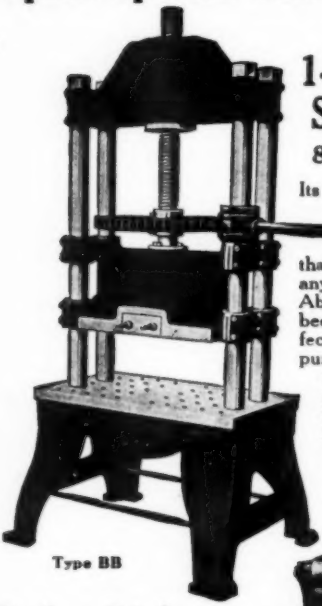
Operation symbols plainly and permanently marked on tools saves time and spoiled work and speeds production.

Luma Electric Equipment Co.

P. O. Box No. 132 Main Office,

Dept. H. TOLEDO, OHIO

Speed Up Your Tool Room Work



Type BB

With This

1-Man 4-Post Screw Press

80 tons pressure

Its superior convenience makes it possible for one man to fit more dies than two men can do on any other type of machine. Abundant room between bed and ram insure perfect alignment of the punch and die. Each of the 4 sizes is rigid, and powerful enough to shear in any die within its dimensions.

Table 20"x36"

Also 3 smaller sizes

Surface Grinder

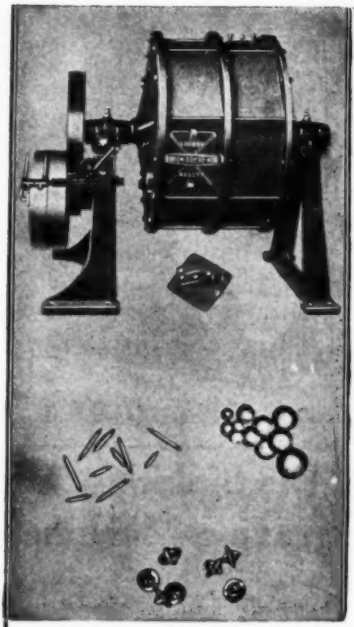
Is accurate and powerful—runs without chatter. Both feeds have graduated dials. Equipped with latest improvements.

Details and price on request

JARECKI MACHINE AND TOOL CO.

Department A

GRAND RAPIDS, MICHIGAN



For Faster and Finer Burnishing!

If you manufacture quantities of small metal articles you are interested in finishing them speedily and economically.

The Abbott Ball Burnishing Barrels when used with Abbott mirror finished burnishing materials produce that speed, economy, and uniformity that present market conditions demand.

Tell us your finishing problems

The Abbott Ball Company

"Originators of Commercial Ball Burnishing"

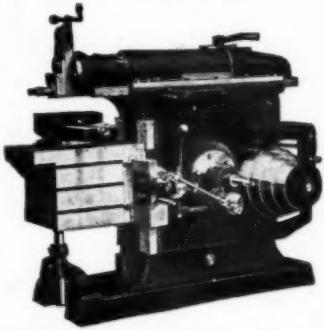
1043 New Britain Ave., Hartford, Conn.

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

Universal Die Sinking and Engraving Machines

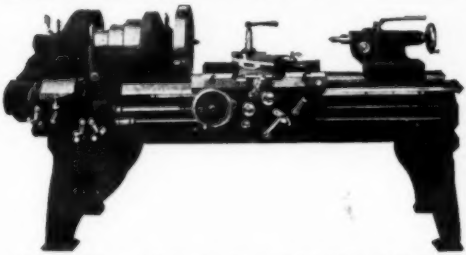
designed to save time and money on the production of light and heavy dies, molds, stamps and general engraved work—

in brass, steel or cast iron. Built by a firm having over thirty years of experience, having equipped many prominent work-shops.

Catalog sent on request

George Gorton Machine Co.
Racine, Wisconsin

HAMILTON

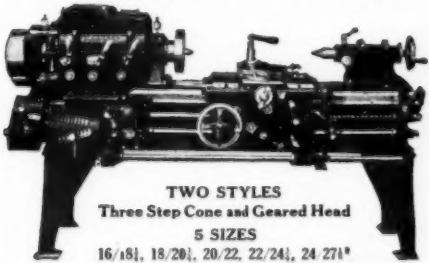


Modern Heavy Duty Lathes 14-16-18 and 20 inch.
Single and double back geared, cone driven.

Write us regarding your needs

The Hamilton Tool Co., Hamilton, Ohio

"Lehmann Lathes"



TWO STYLES
Three Step Cone and Geared Head
5 SIZES
16/18¼, 18/20¼, 20/22, 22/24¼, 24/27½"

Accurate—Powerful Tools Embodying
the most modern ideas in design and construction
Their performance is their best endorsement

Ask any user
Catalog on request

LEHMANN MACHINE CO., St. Louis, U. S. A.

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.

Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolffe Street, Yonkers, N. Y.

SMILLIE Turret Lathe Drill Chuck

Has compensating feature, for setting tools either way from its own center when necessary to line up with the live spindle, making the tool setter independent of errors in alignment of Turret slide. Cutter Reamer or Tap can be set in Chuck to cut its exact size and will not slip because you get the power directly behind the jaws.

Dimensions and Prices:

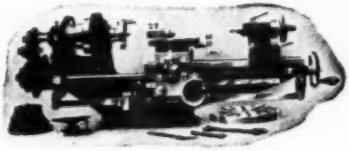
No. 1 takes Drills	No. 55 to 3/8"	$ 7.00
No. 2 takes Drills	No. 42 to 1/2"	8.50
No. 3 takes Drills	No. 1/4" to 3/4"	9.50
No. 4 takes Drills	No. 1/2" to 1"	17.00

Shipped on Trial if Desired

C. M. SMILLIE & CO.

520 E. Larned St., DETROIT, MICH.

The DRUMMOND BENCH LATHE



7" Swing
9" in Gap
1' 4" or 2' 4"
between Centers

PRICE
$185.00
Extra Ft. Bed
$20.00

A Lathe in every way the most complete in its class. Cantilever Bed for accuracy—Massive Headstock with Phosphor Bronze Cone Bearings and Ball Thrust Take-up—T-slotted Boring and Milling Table—New Toolholder with Height Adjustment.

So the list goes on—but see all details in Catalog 8.

THE GEROLD COMPANY

120 Liberty Street **New York, N. Y.**

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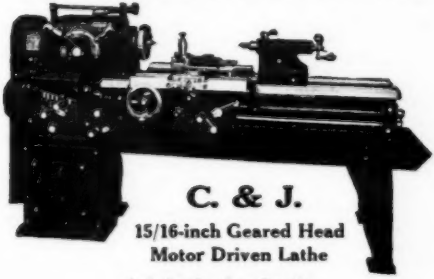
12 Spindle Speeds—

And other features for modern needs.



C. & J.

15/16-inch Geared Head
Motor Driven Lathe

Ask for further details

Carroll & Jamieson Machine Tool Co.

Batavia, Ohio

GEARS

All Kinds—Small

The most accurate made and prices reasonable. We carry a complete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

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CHICAGO STOCK GEAR WORKS
105 South Jefferson Street, Chicago, Ill.

OLIVER OF ADRIAN

Die Making Machines

save an average of 50%

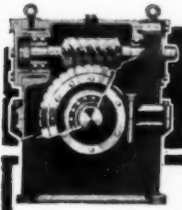
Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.
Drillpointers.
Profilers.
Cutter Grinders

Send for Bulletins

Oliver Instrument Company, 1408 Maumee St., ADRIAN, MICH.



Speed Reducers

Speed reducers of every type and size to meet every possible requirement.
Industrial gearing of all types.

Send for 680 page catalog "GEAR PROBLEMS"

FOOTE BROS. GEAR & MACHINE CO.
229 N. Curtis St., Chicago

MG

MASSACHUSETTS GEARS MAKE GOOD

ALL TYPES:
Spurs, Internals, Bevels, Mitres, Helicals, Spirals, Worms, Worm Gears, Sprockets, Ratchets.

ANY MATERIAL:
Steel, Cast Iron, Brass, Bronze, Aluminum, Fibre, Bakelite, Rawhide.

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. ***Write us.***

MASSACHUSETTS GEAR & TOOL CO.
36 Nashua St., Woburn, Mass.

The Spirit Of the Times

is reflected in the speed and stamina of Rockford High Duty Punch Presses.

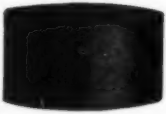
They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

Write today for new catalog

Rockford Iron Works

Rockford, Ill.



We've Made Punches Over 35 Years

Anyone who has made punches for over 35 years knows how, and T. H. L. Punches are as good as we know how to make them. As a result they give satisfactory, continuous and profitable service.

Send us a trial order and you'll come again. We carry a large stock of regular sizes for immediate delivery. Special sizes quickly made. Don't you need a few now? Let us hear from you.

T. H. Lewthwaite Machine Co.

311 East 47th St., *(Est. 1890)* **New York City**

Curtis Universal Joints

of Simple, Rugged Construction

Send for Catalog No. 47

STANDARDIZED

BOSTON GEARS

BOSTON GEAR WORKS SALES CO.

Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

USE the CHICAGO No. 2

POWER PIPE THREADING MACHINE

For

Production and Precision Threading

PORTABLE

Capacity:

¼" to 2" Pipe
½" to 1½" Bolt

Featuring:

1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

Send for Catalog

Chicago Pipethread Machine Co.

Office and Factory: 1623 Racine St., Racine, Wis.

Grant Rotary Riveter

Highest Speed
Perfect Uniformity
Lowest Cost

A Grant Riveter places and finishes one rivet every second it is in operation.

It will finish rivets to the exact degree of tightness or looseness that you desire, and the heads are perfectly formed and highly polished.

The Grant Riveter keeps operating costs at a minimum, and is so simple that unskilled labor can operate it as effectively as can skilled machinists.

Send samples of your riveting work and ask for a catalog

The Grant Mfg. & Machine Co.
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Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

American Tool Works, Inc.
Hartford, Conn., U. S. A.

Established 1858 **SAUNDERS** *Incorporated 1901*

Pipe Threading and Cutting Machinery

Belt or Electric Motor Driven

All sizes, ⅛ inch to 18 inches inclusive

Motor Driven Machines for Plumbers and Steam Fitters

For

Permanent or Portable Installation

No. 4-B ½ to 4" inclusive

No. 5-D 1 to 6" inclusive

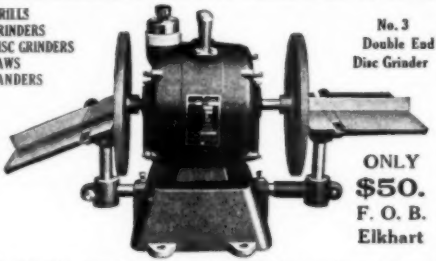
Send for Catalogue

D. Saunders' Sons, Inc.

31 Atherton Street, Yonkers, N. Y.

Winterhoff Motor Driven Portable Tools

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS



No. 3
Double End
Disc Grinder

ONLY
$50.
F. O. B.
Elkhart

The No. 3 has been designed to meet a demand for a medium priced machine that would furnish a true flat grinding surface, and would stand up under any usage. Its sturdiness, accuracy and handiness are unsurpassed.
Write today concerning Winterhoff Portable Tools.

Winterhoff Tool & Machine Co., 109 South Elkhart Ave., ELKHART, IND., U.S.A.

Etco Keyless Ball Bearing Drill Chucks

Now Mad e ith

Holding Collar for Electric Drills and Portable Tools.

Can be furnished with any Thread or Taper to fit your Drills.

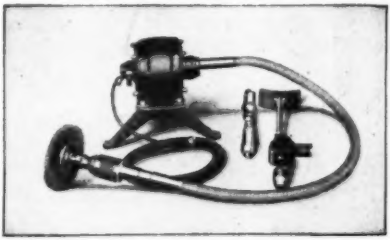
Shipped on 10 days' trial

Chuck with Holding Collar

Eastern Tube & Tool Company, Inc.
600 Johnson Avenue, BROOKLYN, N. Y.

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



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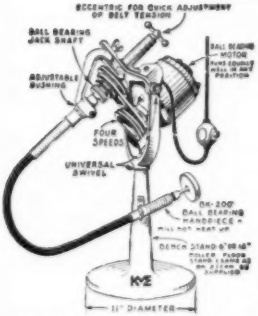
Stow Flexible Shaft Co., 3454 Ludlow St., Philadelphia, Pa.

The Best Since 1876

Keller "BK" Flexible Shaft Grinder

"The Machine of 100 Uses"



¼—⅓— ½H. P.
Speeds up to 10,500

COMPLETE LINE OF ACCESSORIES

Rotary Files—
Emery Wheels—Sanding Drums—
Wire Brushes, Etc.

Keller Mech. Engineering Corp., 58A Washington St., **Brooklyn, N.Y.**

(See Page 72)

The Copperhead Lap Set

contains 7 Laps in following sizes: 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2.

The body of a ***Copperhead Lap*** is made of steel and permanent, the sleeve is made of copper and renewable when worn out. Copperhead Laps are cost reducers; cut freely, and produce a clean and true hole. They have new and patented features.

Ask for details and prices

GROETCHEN TOOL & MFG. CO.

721 Fulton St., Chicago, Ill.

Builders and designers of plain and intricate Dies and Special Machinery

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Racine Junior, 4" capacity. Portable—The smallest of a complete line including machines up to 12" capacity.

Precision In Metal Cutting

Every Racine metal cutting machine is built for accurate work.

Time and materials are saved—production schedules advanced when you use Racine power hack saws

These machines are backed by fifteen years of specialized experience and study in metal cutting.

There is a Racine precision saw for every metal cutting need. Write for valuable Free time chart and full information.

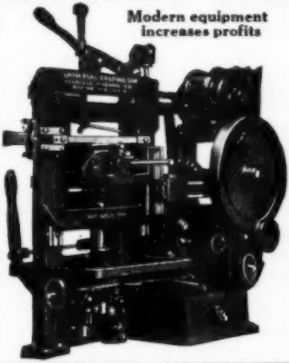
Racine Tool & Machine Co.

1429 Junction Ave., Racine, Wis.

RACINE

HIGH-SPEED METAL CUTTING MACHINES

—PEERLESS—
UNIVERSAL SHAPING SAW



Modern equipment increases profits

Different Principles
Greater Efficiency

Give The Most Of—

Speed
Accuracy
Blade Economy

SIZES:
6"x6"--9"x9"--13"x13"

PEERLESS
HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co.
1218 Sixteenth St.
Racine, Wisconsin
Write for Details

Don't Call A Gang Of Men

away from their work to do the lifting and lugging of heavy pieces, when one man and a

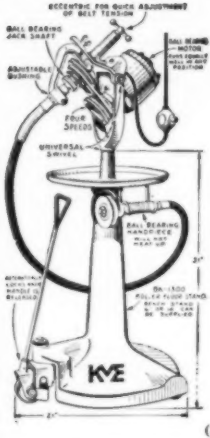
CanTon Portable Crane and Truck

can do it more quickly, more efficiently and with greater safety. ***The CanTon*** is made in six sizes to hoist, truck, and place any load up to 6,000 lbs. weight. Can be equipped now with the safety friction brake.

It will pay you to investigate
Write today for Booklet E-8

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 101 West 31st Street



Keller "BK"

"The Machine of a Hundred Uses"

¼ — ⅓ — ½ — H. P.
SPEEDS UP TO 10,500

Non-Heating Shafts
Ball Bearing Handpieces

FILING— GRINDING—
POLISHING—DRILLING—
ETC.

Tell us your problems

Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N. Y.

(See Page 69)

HASKINS

Flexible Shaft

Equipments

Ideal for foundry grinding, marble grinding, tool steel cleaning, grinding welds, die grinding and other uses.

Type H-5 shown has ¼ H. P. ball bearing motor; 7/16"x5' flexible shaft, Four-speed Timken roller bearing countershaft—speeds 875, 1300, 2350, and 3500.

Write for Catalog No. 40.

R. G. HASKINS CO.

Portable Flexible Shaft Machinery

4640 W. Fulton St., Chicago

Branch Offices in Principal Cities.

Has the Work Stood Still

While high priced mechanics dig fretfully at a broken tap?

The Walton Tap Extractor—

is the tool that solves your problem. Simply insert the fingers into the flutes, twist the outer end, and the tap slides out. Made in 3 and 4-flute styles.

Sixty days' trial will prove its value

The Walton Company

302 Pearl St., Hartford, Conn.

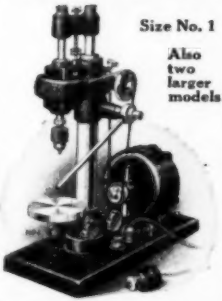
Do YOU Drill Small Holes?

If you do, you should know of the many advantages to be obtained through using

The A. M. Sensitive Drilling Machine

Your tool room, laboratory or experimental department will find these machines indispensible. Economies effected by its use seldom fall under 25% and often production is doubled. Has the "feel" necessary for drilling holes down to .010", is portable and electrically driven. Made in three sizes. The experience of over 35 years is built into every machine, and each machine is covered by an unconditional permanent guarantee against any defect.

Write for Booklet "C"



Size No. 1

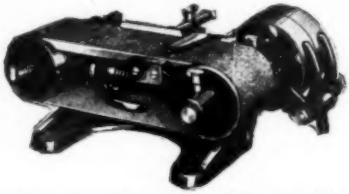
Also two larger models

ADOLPH MUEHLMATT

434-436 Elm St., Cincinnati, Ohio

Abolish Expensive Hand Finishing

with a



Simplex-A Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street NEW YORK

ACE Grinders

All sizes and types

Belt and Electric
Bench and Floor
Ball and Plain Bearing

March Bargain—
2 Wet Tool Grinders at 50% discount to first two buyers.

Send for Catalog

Johnson Manufacturing Company
KALAMAZOO, MICH.

Repay Cost 5 Times a Year

Let us tell you about the BIG Profits in TOWSLEY Trucks

Efficiency EXPERTS say that **TOWSLEY TRUCKS** repay their cost every two to three months. Every style for every need.

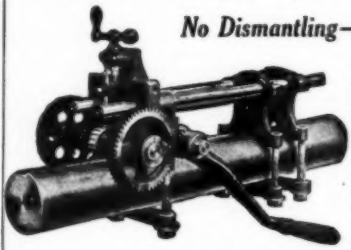
Many Sizes and Styles from $10 up.

Write us for details of the BIG truck profits today!

John T. Towsley Mfg. Co., Cincinnati, Ohio, U. S. A.

"BURR" Keyseating Costs Less

No Dismantling—No Fuss



The BURR Portable Keyseater

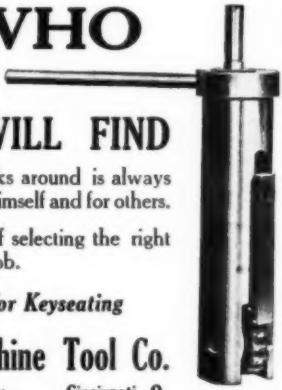
Cuts keyways up to 12" long, in shafts up to 5" diam., anywhere, in any position.

Have one on hand for your next emergency—the cost is often saved on a single job. The seven sizes are ***quick*** and ***accurate***. Hand or power driven. Over 10,000 in use. ***Order yours today and save money!***

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

HE WHO



HUNTS WILL FIND

A fellow who looks around is always making it easy for himself and for others.

It's just a matter of selecting the right tool for the right job.

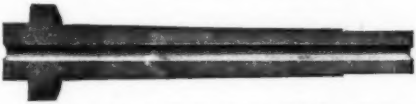
Catalog O for Keyseating

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.

To Users Of

Hollow Bored Forgings and Steel Shafts



Rams—Pistons—Clutch Shafts—Lathe Spindles—Hydraulic Cylinders and Similar Jobs made to your Specifications.

Our Specialized Equipment—Skilled Labor and Experience, Permit our Guaranteeing Quality, Service and Prices.

Send blueprint for trial quotation

American Hollow Boring Co.
Erie, Penna.

Screw Machine Products

Up to 1¾" Diameter

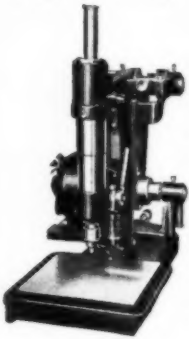
Any Quantity

Steel — Brass — Bronze
Stainless Steel — Rustless Iron

Accuracy and Prompt Delivery

The Gravity Carburetor Co.
Machine Screw Department
3068 East 93rd St., Cleveland, Ohio

Sigourney Sensitive Drills



The Quality Tools That Reduce Costs

SIGOURNEY DRILLS are designed for those who realize that the best tools pay the largest returns on the investment.

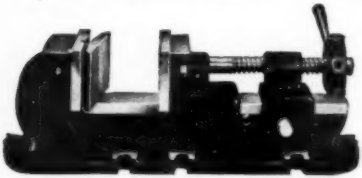
Made with one to four spindles, plain or ball bearing, belt or motor drive. *All parts interchangeable.*

The illustration shows our motor-driven, all-ball-bearing No. 0 High Speed Bench Drill which may be operated up to **10,000 R.P.M.**

Full data and prices sent you on request.

Sigourney Tool Co.
Hartford, Conn., U. S. A.

'Most Efficient Vise Made'



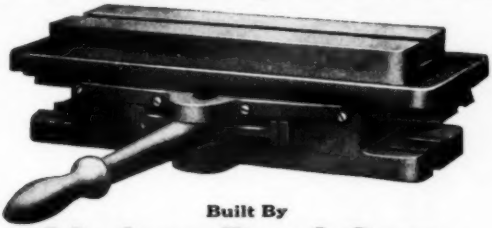
GEM Drill Press Vise

THAT will also be your verdict when you know its power, capacity, adaptability and lightning speed of setting. Designed by a mechanic for mechanics. The independent swivel jaw holds taper and irregular work with a bull-dog grip. The Gem saves time in shop and factory. The folder shows its use in drilling and milling operations.

Glad to mail you a copy

J. E. Martin Tool & Die Works, 528 W. State St. Springfield, O.

Quick Acting Milling Machine Table



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Modern-Bond Corp.

823 West 5th Street,
WILMINGTON, DELAWARE

Contract Machinery Manufacturers

Will Be Pleased to Quote on
Special Machines—Jigs and Fixtures
Dies—Tools—Turret Lathe Work

USE "D. & W." DEMAGNETIZERS!

Of unique construction, they are simple, dependable

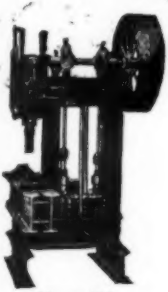
A rigid continuous "U" shaped core, made of the highest grade laminated electrical steel, is energized by two stationary coils, thru which alternating current is passed. Construction is similar for d. c. machine, and in addition containing a small converter.

INDESTRUCTIBLE D&W MAGNETIC CHUCKS REG. U.S. PAT. OFF.

Have you any special problems in connection with the use of Magnetic Chucks? We will gladly investigate and report on same, or design a special chuck for your particular needs. ***Write us today.***

J. & H. Electric Co., 159 Clifford St., Providence, R. I.

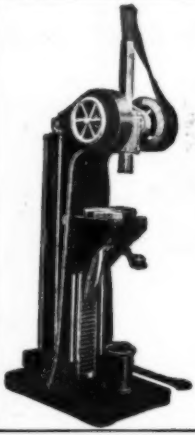
Lourie Hydraulic Presses



Type W

A High Speed Press
for
Straightening
Moulding
Punching
Forming

Lourie Hydraulic Co.
Springfield, Illinois



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin—showing 30 different sizes

Atlas Press Co.
Department B,
Kalamazoo, Michigan

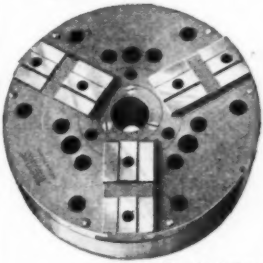
Why Not?

Why not save nine-tenths of your cutting time? Costs nothing to find out.

Write for Catalog No. H21 and prices

The W. W. Oliver Mfg. Co.
1495 Niagara St., Buffalo, N. Y.

Accuracy—Speed—Efficiency
"HOPKINS" 3-Jaw Chuck



"HOPKINS" original design, selected materials and the Dust-Proof feature guarantee continuous production at lowest costs.

Greater gripping power, lessened vibration and increased centering precision are guaranteed in each "HOPKINS" Chuck.

"HOPKINS" Two and Three Jaw Chucks are made in the following diameters: 8", 10", 12" and 14"—all carried in stock.

Write for Bulletin No. 3—28

TOMKINS-JOHNSON CO.
600-610 Mechanic St., Jackson, Mich.

Eliminate Counterbore and Spot Facer Troubles

The "UTILITY"

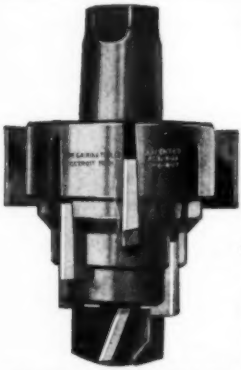
Incorporates features that insure sound economies by practically eliminating spot facer and counterbore troubles.

Its cutter drive is simple and powerful. The cutters, of especially tempered high speed steel, ***cannot break,*** and are removable—its sets screws cannot loosen or the pilot twist off.

Shall we send our catalog?
It points the way to tool economy!

The J. C. Glenzer Co.

6469 Epworth Boulevard
DETROIT, MICHIGAN



GAIRING

MULTIPLE-OPERATION
CUTTERS

SOLID
AND
INSERTED BLADE

Our business is the planning and production of end cutting tools upon which we have concentrated our thoughts and efforts for many years.

Our Technical dept. devotes its time exclusively to planning and designing tools to suit your requirements.

Send us your Blue Prints or parts to be machined, we will design and suggest tools to produce holes most economically.

No obligation, merely a willingness to be helpful. Tool Catalog and Engineering Reference mailed on request.

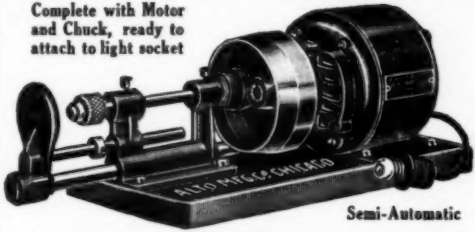
THE GAIRING TOOL COMPANY

19-22 W. Woodbridge St., DETROIT, MICH.

Representatives In Principal Cities

No. 1 ALTO High Speed Motor Driven Tapping Machine

Complete with Motor and Chuck, ready to attach to light socket



Semi-Automatic

Self-contained, compact and powerful, this Alto No. 1 Tapper combines a high forward speed with a reverse three times as fast, and no lost motion. It has a capacity of 5/16" in brass and 1/8" in steel. Self-contained, it operates without extra equipment, and needs only to be attached to a light socket.

Let us send you descriptive matter and quote the price

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

AT LAST!! A Sensible Positive Means for Holding Taps

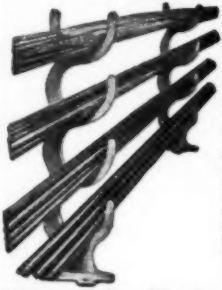
Ettco

TAP HOLDING CHUCK

A Visible Positive Grip on the Square.—
Centers on the Round.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave., BROOKLYN, N. Y.

Have YOU Tried Them Out in YOUR Plant?



Hundreds of plants, large and small, all over the country are enthusiastic users of

The Handiest Racks

Many of them sent in trial orders for three units—and practically all of them have, in a very short time, sent in additional re-orders. For these Racks are ideal for servicing machines, or storage purposes, as they keep bar stock, shafting, piping etc., neatly piled and assorted. Saves the operator's time and steps—makes stock easy to check at all times. Will be glad to ship you three units for trial purposes in YOUR plant upon receipt of your request.

May We Hear from You Today?

Wm. S. Yohe Supply Co.

503 Mahoning Road, N. E., Canton, Ohio

Burke Bench Millers

FOR

Accuracy
Convenience
Economy

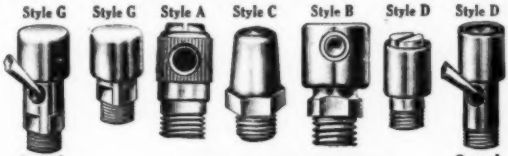
On small milling operations, where accuracy as well as production must be had, are the places to use Burke Bench Milling Machines.

Built in various sizes, both hand and power feed, and at prices ranging from $125 to $220.

$155

BURKE No. 3.

The Burke Machine Tool Co., 297 East 16th Street, Conneaut, Ohio



TUCKER

Oil Hole Covers

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

Send for Catalogue No. 12

W. W. & C. F. TUCKER, INC., 612 Capitol Ave., Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

Taylor & Fenn Belt Driven

No. 12 Spring Press

UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 3¼ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machnie after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.

Hartford, Conn., U. S. A.

KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User At Greatly Reduced Prices

$115.00 F. O. B. Factory

COMPLETE With All Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at any price.

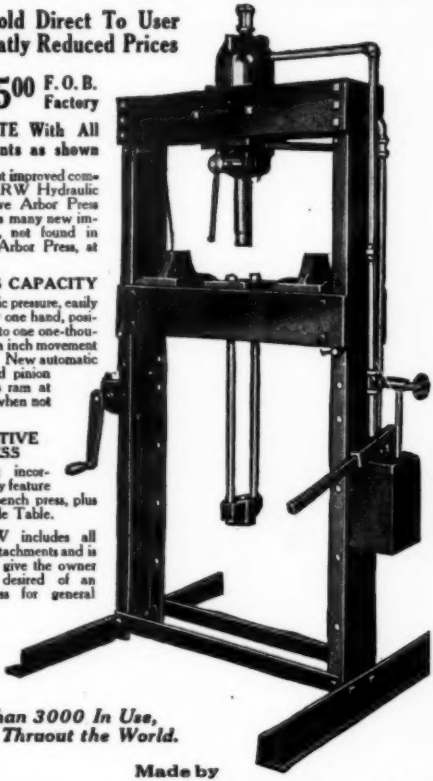
35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, positive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus —Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.



More Than 3000 In Use, Thruout the World.

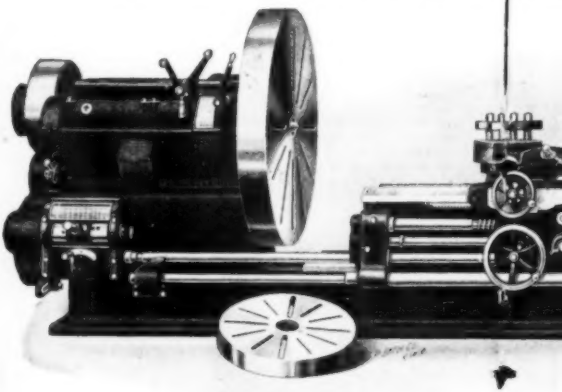
Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N.Y., U.S.A.

LeBlond Sliding B

A Line Of Universal Lathes

This line of lathes has been developed to meet the req
universal lathe of wide adjustable range. They are ch
section of which is adjustable along the lower ction
gap and any necessary distance between centers. The
those of our regular engine lathes. They are built in a
headstock or motor drive. We have complete literature



LeBlond 25"-50" Heavy Duty Geared

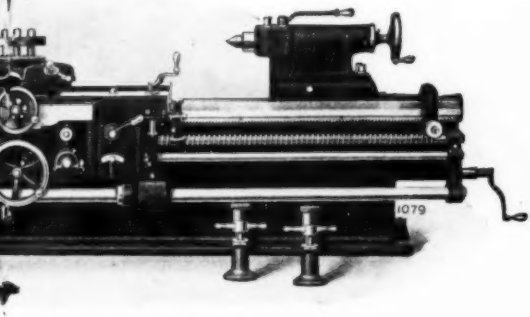
The R. K. LeBlond Mach

Cincinnati,

g Bed Gap Lathes

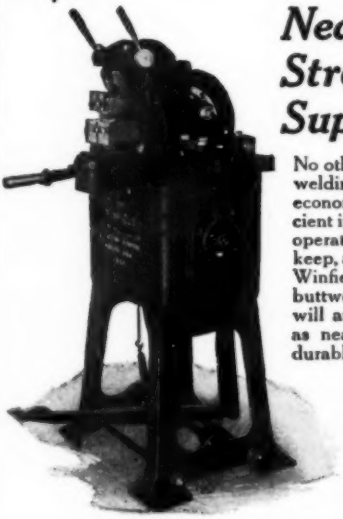
ies Of Adjustable Capacity

the requirements of jobbing and service shops for a ure characterized by a sliding double bed, the top ction, providing an increased swing through the s. The other units and features are identical with lt in a line of sizes with either cone driven or geared eature on these machines now ready for distribution.



Geared Head Sliding Bed Gap Lathe

Machine Tool Company
nati, Ohio



TYPE B-103
Capacity ⅛" to ½" round stock

Neater, Stronger, Superior

No other method of welding proves so economical or efficient in cost, both of operation and of upkeep, as the Taylor-Winfield method of buttwelding. Nor will any other give as neat, strong or durable welding jobs!

The Taylor-Winfield line comprises spot as well as butt welders, each model peerless in the field.

THE TAYLOR-WINFIELD CORP.
WARREN, OHIO

TAYLOR-WINFIELD WELDERS

Spot, Butt, Seam or Portable

Strong, Durable, Dependable Hack Saws for General Work, and Low In Price

Marvel No. 1 Hack Saw

Capacity 4"x4"

A splendid, efficient saw for use where large capacity is not essential. Order now.

MARVEL No. 2 hack saw with swivel vise that swivels both ways, right or left, and has adjustable stroke.

CAPACITY: { 6"x6" on long stroke. 8"x8" on short stroke.

The ideal saw for all around general work. Place your order with us today. Both these saws also furnished motor driven.

Ask about Marvel High-Speed-Edge Hack Saw Blades

Armstrong-Blum Mfg. Co.

341 N. Francisco Ave., CHICAGO, ILL.

Anderson Improved Balancing Ways

Ever-Ready—Sensitive—Reliable

They need no adjustment, no centering, and no special leveling. The rotating discs are made of chilled iron, run in specially designed ball bearings and are extremely sensitive.

Each of the six sizes has no equal for balancing anything that revolves with its dimensions.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

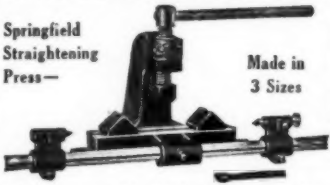
Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

A Real Time Saver—

Springfield Straightening Press—



Made in 3 Sizes

Invaluable in Tool Room and Shop; also for Straightening Cranks, Cam Shafts, etc.

The arrangement of the ***Springfield Straightening Press*** is the ***acme of convenience,***

Any length work, rough, or finished, within the range of its centers may be tested and straightened without unnecessary walking from lathe to press. Springfield is accurate and speedy. Its service in aligning sprung tools is unexcelled. A Springfield quality product.

Our folder will illustrate its many uses

The Springfield Machine Tool Company

633 West Southern Avenue, SPRINGFIELD, OHIO

We also manufacture Engine Lathes and Shapers

A Real Economy In Drilling Costs

Transform your single spindle drill into an accurate multiple driller.

Utilizing the feeds and speeds that you use for drilling one hole, you can drill two to six holes.

A special double adjustment permits any pattern of multiple drilling. We can design special heads with adjustable or fixed spindles.

If you send us a layout of your work we will show you how to cut your costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

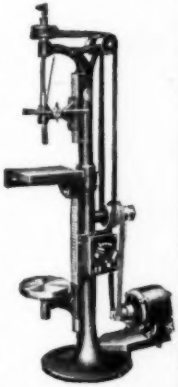
The U. S.—

A 14" Sensitive Floor Drill

Designed in a machine tool shop to meet the need for a drill with a capacity up to ½" that will turn out accurate, rapid work at the least cost.

Price with motor, switch and belts -	$115
Or with Countershaft for Belt Drive	$70

Three speeds; spindle ground to size with ball thrust bearing, counterbalanced by weight inside column; vertical adjustment to head; tables adjustable to any type of work. Write for folder, or better still send us your order.



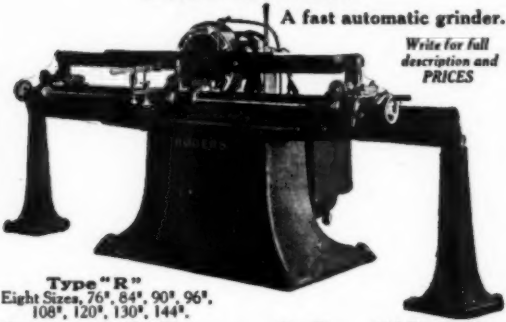
The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio

New Rogers Sectional Wheel Shear Blade and Light Face Grinder

A fast automatic grinder.

Write for full description and PRICES



Type "R"
Eight Sizes, 76", 84", 90", 96", 108", 120", 130", 144".

Samuel C. Rogers & Co., 211 Dutton Ave., BUFFALO, N. Y.

Armstrong Tools

Tool Holders

Over 100 shapes and sizes for every operation on Lathe, Planer, Shaper, Slotter, etc.—the only complete line. Better have our Tool Holder Catalog.

Ratchet Drills

For all purposes—"Packer," for rough service; "Standard," for general use; "Weston," extra heavy; "Universal" and "Short Ratchet." Ask for Ratchet Drill Catalog.

Drop Forged Wrenches

All kinds. All sizes. Highest quality. Write for Catalog of Steel Wrenches.

Clamps and Dogs

Drop forged. All shapes and sizes. Highest quality. Alloy steel screws. Separate Catalog.

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Speed Plus Safety and Accuracy

Drill set-ups in one half the time with the Combination Drill Table and Vise. Avoids necessity for holding work by hand, cuts down accidents, increases the efficiency of your workmen.

A Safety Tool that Saves Its Cost in Labor Every Six Months.

Write for free trial offer

Modern Machine Tool Co.

Jackson, Michigan

WHERE else

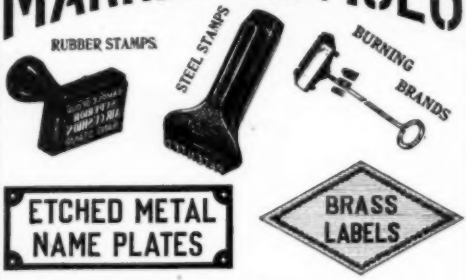
can you buy an 8" Drill Press Vise for $25.00.

The 4" size is only $15.00—

Write us Direct if your supply house does not have one in stock. Bulletins on request.

DEMCO Inc., 105-115 S. Calvert St., Baltimore, Md.

MARKING DEVICES

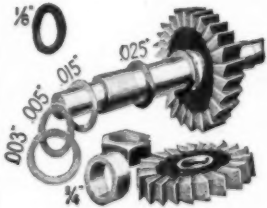


THE SCHWERDTLE STAMP CO.

BRIDGEPORT, CONN.

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: ⅜, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞, 2, 2¼, 2½, 3, 3½ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

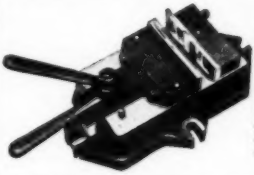
Ask us to send samples; you'll like them

Detroit Stamping Company

3443 West Fort St., Detroit, Mich.

The Most POWERFUL Vise Made

Hartford Milling Vise



Jaw width ..... **5"**
Jaw depth ..... **1¼"**
Maximum opening ... **3½"**
Weight ..... **40 lbs.**

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2¼".

The "Hartford" is designed to give the utmost in service. A lower cam-faced handle gives required quick opening and return—while a top eccentric lever-handle furnishes tremendous binding power. You can rely on "Hartford" to survive the hardest usage. Its steel parts are drop forged, hardened and ground—its base is made of special iron.

Send for descriptive catalog illustrating its usefulness

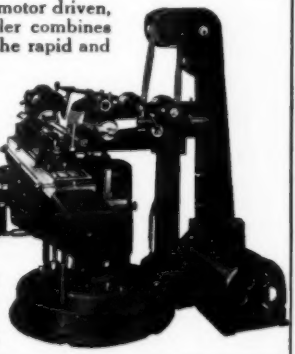
Hartford Special Machinery Co., 285 Homestead Ave., Hartford, Conn.

Improved Thompson Universal Grinder

Self-contained and motor driven, this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

These machines are now equipped with the new auxiliary coarse cross feed for surface grinding.

Capacity 12"x36"



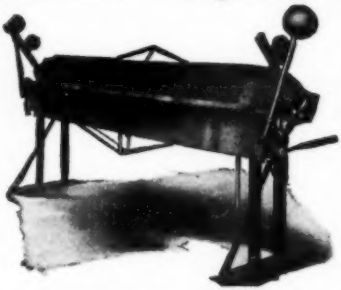
The Thompson Grinder Co.
1534 West Main St.,
SPRINGFIELD, OHIO

Chicago Steel Bending Brakes

Hand and power, for bending from light sheets up to ¾ in. plate.

More than 25,000 in use.

Write for illustrated catalog



DREIS & KRUMP MFG. CO.
7422 Loomis Blvd., Chicago, Ill.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

Grinding Castings

Flexible Shaft Machines

Mall

Fast but smooth work with MALL disc grinding wheels.

Ask your jobber or write us for catalogue

Mall Tool Company, 7730 So. Chicago Ave., CHICAGO, ILL.

Makers of the Largest Assortment of Flexible Shaft Machines and Attachments

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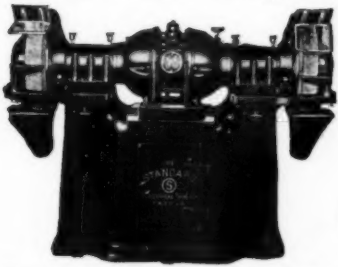
STANDARD Heavy Duty GRINDER



3 Sizes: 5—7½ and 10 H. P.

Four Ball Bearings

G. E. 40 degree motors and Push Button Control.
S. K. F. Ball Bearings.

Write for complete catalog on Tools

THE STANDARD ELECTRICAL TOOL CO.

Established 1912. **Cincinnati, Ohio**

Pollard Steel Work Bench

Strength
Utility
Durability

Made in Various Heights, Widths and Lengths

Pollard Bros. Mfg. Co.
4038 N. Tripp Ave., Chicago, Ill.

PRODUCTION DRILLS

A complete line of motor and belt driven drills, 10 in. to 25 in., backed by 50 years' toolmaking experience.

Write for Catalog

Buffalo Forge Co.

161 Mortimer St., Buffalo, N. Y.

In Canada: Canadian Blower and Forge Co., Ltd., Kitchener, Ont.

ACE Polisher

Timken Bearings

$75

For Single Tight Pulley Machine

$95.00 For Tight and Loose Pulley Machine

America's Greatest Value

Spindle 1¼" between flanges and 50" overall

Johnson Manufacturing Company

KALAMAZOO, MICH.

Equip with

BRIDGEBILT Factory Seating

Adjustable for comfort—steel for long life

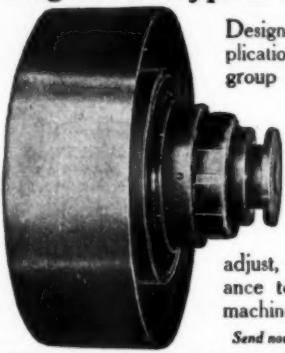
Select the chairs and stools for your factory from this line. They will meet your particular needs and stand up under any wear you give them.

Write for prices and illustrated folder

The Chicago Wire Chair Co.

616 No. LaSalle St., Chicago, Ill.

Edgemont Type E Disc Clutch

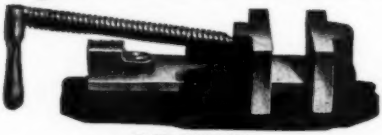


Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDGEMONT MACHINE CO., Dayton, Ohio

Speeds Production



No. 4
Type B
$10.00
F. O. B.
Detroit

(PATENT PENDING)

Greene Quick Acting Vise

Portable, fits Drill Press or other machines. Instant adjustment—strong—accurate—reliable. Slight turn of handle produces powerful clamping or quick release by means of our ***Special Screw and Open Nut,*** the threads of which are ***oppositely undercut.*** Jaws open 4", base is 11½" long, weight 15 lbs.

Heavy Steel Plate Guides Sliding Jaw
Threads Clean Automatically—No Binding

Central Distributing Co.

946 Harper Ave., Detroit, Mich.

Mail Orders Solicited-Agents Wanted

"Wear Ever" Adjustable Spacing Collar

For Milling Machine Arbors

Hardened Ground

SAVE SET-UP TIME

"A GOOD COMBINATION"

HARDENED & GROUND SOLID SPACING COLLARS

Ends are ground parallel, lengths are accurate

Made of Alloy Steel hardened

All thicknesses and standard arbors carried in stock for immediate delivery.

SCULLY-JONES & CO., Tool Division

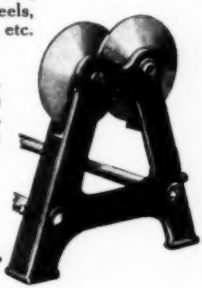
1901 S. Rockwell St., Chicago, Ill.

Twentieth Century Balancing Tool

Always on the level

The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

Will set anywhere and is easily portable. In sizes up to 24,000 pounds capacity.



Ask for the Bulletin

Sundstrand Machine Tool Co.

Rockford, Ill.

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Drilling Machines, Post
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Taylor & Fenn Co., Hartford, Conn.
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Schwerdtle Stamp Co., Bridgeport, Conn.

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Brewster Co., Wm., Inc., 50 Church St., New York
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Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

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Oliver Instrument Co., Adrian, Mich.
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Wardwell Mfg. Co., Cleveland, O.

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Haskins Co., R. G., 4636 W. Fulton, Chicago

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Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Western Tool & Mfg. Co., Springfield, O.

Gauges, Taper
Hartford Special Mchy. Co., Hartford, Conn.

Gears
Boston Gear Works Sales Company, Norfolk Downs, Mass.
Chicago Stock Gear Works, 105 S. Jefferson, Chicago
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Grinders, Knife
Rogers & Co., Samuel C., Buffalo, N. Y.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.
Walls Sales Corp., 96 Warren St., New York

Grinding Machines, Bench
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
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Oliver Instrument Co., Adrian, Mich.
Thompson Grinder Co., Springfield, Ohio

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Thompson Grinder Co., Springfield, Ohio

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Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Porter Cable Machine Co., Syracuse, N. Y.

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Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., Ottawa, Ill.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft
Keller Mch. Eng. Corp., 58A Washington St., Brooklyn, N. Y.

Grinding Machines, Internal
Mall Tool Co., 8269 S. Chicago Ave., Chgo.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

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Mall Tool Co., 8269 S. Chicago Ave., Chgo.
Porter-Cable Machine Co., Syracuse, N. Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 5001 N. Lincoln St., Chicago

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Thompson Grinder Co., Springfield, Ohio

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Grinding Machines, Tool
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Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Handles, File
Hyro Mfg. Co., 352 W. 13th, New York.

Handles, Soldering Iron
Hyro Mfg. Co., 352 W. 13th, New York.

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

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Jigs and Fixtures
Hartford Special Mchy. Co., Hartford, Conn.

Keyseating Machines
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Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
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Boye & Emmes Mch. Tool Co., Cincinnati, O.
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Carroll & Jamieson Mch. Tool Co., Batavia, O.
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Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Lehmann Machine Co., St. Louis, Mo.
McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York
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Lathes, Short Bed
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Taylor & Fenn Co., Hartford, Conn.

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Oil Hole Covers
Tucker, W. W. & C.F., Inc., Hartford, Conn.

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Dunly Machine Specialties, Inc., 4012 Lincoln Ave., Chicago

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Saunders' Sons, D., Inc., Yonkers, N. Y.

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Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises
Saunders' Sons, D., Inc., Yonkers, N. Y.

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Lourie Hydraulic Co., Springfield, Ill.

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Taylor & Fenn Co., Hartford, Conn.

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Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

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Rockford Iron Works, Rockford, Ill.

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Yohe Supply Co., Wm. S., Canton, O.

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Lambert Mchc. & Engine'g Co., Cleveland, O.

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Cincinnati Specialty Mfg. Co., Cincinnati, O.

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Grant Mfg. & Mchc. Co., Bridgeport, Conn.

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Anderson Brothers Mfg. Co., Rockford, Ill.

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Reynolds Machine Co., Massillon, Ohio

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Gravity Carburetor Co., Cleveland, O.

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New Britain Mchc. Co., New Britain, Conn.

Set-Up Appliances
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Shafts, Flexible
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Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 8389 S. Chicago Ave., Chgo.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chgo.

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American Tool Works Co., Cincinnati, O.
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Springfield Machine Tool Co., Springfield, O.

Shears, Alligator
Canton Foundry & Machine Co., Canton, O.

Shears, Hand
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Hendley & Whittemore Co., Beloit, Wis.
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Hendley & Whittemore Co., Beloit, Wis

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Rhodes Mfg. Co., Hartford, Conn.

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Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Gaterman Mfg. Co., Manitowoc, Wis.
Grostchen Tool & Mfg. Co., 721 Fulton, Chicago
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
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Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Gaterman Mfg. Co., Manitowoc, Wis.

Tapping Machines and Attachments
Alto Mfg. Co., 1647 Wolfram St., Chicago
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Connneaut, Ohio
Cisco Machine Tool Co., Cincinnati, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Gaterman Mfg. Co., Manitowoc, Wis
Leland-Gifford Co., Worcester, Mass.
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

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Threading Machines
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Rickert-Shafer Co., Erie, Pa.

Threading Tools
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Tool Holders
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks
Chicago Wire Chair Co., 419 N. La Salle St., Chicago

Tool Stands
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Spot Facing
Gammons Mfg. Co., Rochester, N. Y.

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Towsley Mfg. Co., John T., Cincinnati

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Borgeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery
Bath & Co., Cyril J., Cleveland, O.
Bennett Mchy. Co., 50 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washington Blvd., Chicago
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 154 South Clinton, Chicago
Cincinnati Mchy. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Davis Machinery Exchange, Toledo, O.
Delta Equipment Co., Philadelphia, Pa.
Donahue Steel Products Co., 74th and Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Empire Machinery Exchange Co., Inc., Cleveland, Ohio
Easley Machinery Co., E. L., 556 Washington Blvd., Chicago
Fitzsimmons-Cole Mchy. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Harris Bros. Co., 55th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia
International Mchy. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.
Keystone Sales Co., Cleveland, Ohio.
Kinney Co., K. A., Cincinnati, O.
Klauber Mchy. Co., E. L., St. Louis.

Used and Rebuilt Machinery—Continued
Lee Machinery Co., Inc., Detroit, Mich.
Little Co., W. P., Cleveland, O.
McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York
McDonald Machinery Co., St. Louis
McMullen Mchy. Co., Grand Rapids, Mich.
Manhattan Machinery Exchange, 30 Church St., New York
Manning, Maxwell & Moore, Inc., 27 No. Jefferson, Chicago
Marr-Galbreath Mchy. Co., Pittsburgh, Pa.
Marsh Machinery Co., A. R., Cleveland, O.
Midland Equipment Co., 613 W. Van Buren, Chicago
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Machy. Co., Chas., 108 S. Clinton St., Chicago
Morey and Co., Inc., 40½ Broome St., N. Y.
Morris Machinery Co., Inc., Newark, N. J.
Motch & Merryweather Machinery Co., Cleveland, O.
Nelson Machinery Co., Green Bay, Wis.
Niles Tool Works Co., Hamilton, O.
Norton-Broadway Mchy. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Randle Machinery Co., Cincinnati, O.
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mchy. Sales Co., Pittsburgh, Pa.
Rentschler & Co., J. P., 38 N. Jefferson St., Chicago
Riverside Machinery Depot, Detroit, Mich.
Russell Machine Co., Pittsburgh, Pa.
Saltzman, B. L., 809 W. Lake St., Chicago
Selfreat-Elstad Machinery Co., Dayton, O.
Severin-Strafer Machinery Corp., 30 Church St., New York
Simmons Machine Tool Corp., Albany, N. Y.
Stoehr Machinery Co., A. M., 418 Mid-City Bank Bldg., Chicago
Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., Newark, N. J.
Syracuse Supply Co., Syracuse, N. Y.
Taylor-Hall Welding Corp., Worcester, Mass.
Tinners Mchy. Co., 601 W. Monroe, Chicago
Tubor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
United Mchy. & Supply Co., St. Louis.
Wayne Machinery Co., Ft. Wayne, Ind.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Winterer, Herman L., Philadelphia

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Central Distributing Co., Detroit, Mich.
Demco, Incorporated, Baltimore, Maryland.
Graham Mfg. Co., Providence, R. I.
Marsh Machinery Co. A. R., Cleveland, Ohio
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

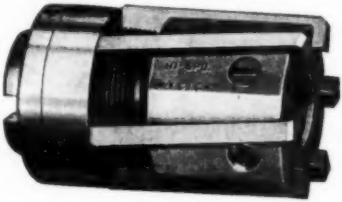
Vises, Milling Machine
Hartford Special Mchy. Co., Hartford, Conn.
Marsh Machinery Co. A. R., Cleveland, Ohio

Welders, Electric Spot
Taylor-Winfield Corp., Warren, O.

Wood Working Machinery
Hendley & Whittemore Co., Beloit, Wis.
New Britain Machine Co., New Britain, Conn.
Porter-Cable Machine Co., Syracuse, N. Y.
Towsley Mfg. Co., John T., Cincinnati

Worms
Massachusetts Gear & T. Co., Woburn, Mass.

"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production. The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

This is a real production reamer. The left hand helical flutes cut fast and clean. Made only in high speed steel. Made with straight and tapered shanks.

All Sizes Carried in Stock

Catalog on Request

The Schellenbach-Hunt Tool Co.

118 Opera Place, Cincinnati, Ohio

Agents: **E. E. Fletcher, 6007 Euclid Ave., Cleveland, Ohio**

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published in the Classified Section at the rate of **50 cents a line**, across the page, each issue, plus **$2.50** for name and address. Minimum charge, **$5.00.** No display permitted.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

Monthly Circulation of Machine Tool Blue Book, 25,000.

WANTED BY

The Stearns Roger Mfg. Co., 1720 California St., Denver, Colorado

UNIVERSAL TILTING TABLE.

We are in the market for a universal tilting table 48" to 60" square platen, for use with horizontal boring and drilling machine.

FOR SALE BY

Aetna Machinery Co., Not Inc., 565 W. Washington Blvd., Chicago

Brake, hand, Dreis & Krump 8'x16 ga.
Drill press, No. 1, Leland-Gifford 2-spindle, 12" swing, capacity ⅜".
Grinder, No. 12 Besly disc, 28" with universal attachment.
Hack saw, No. 5 Marvel high speed automatic, capacity 6"x6".
Punch, Excelsior No. 20 quick action, capacity 5/16" in ⅛", 20" throat.

FOR SALE BY

United Mchry. & Supply Co., 4640 Newberry St., St. Louis, Mo.

Bulldozer, Rock River 20" stroke.
Hack saw, Peerless 24" blade.
Nut threader, Acme 4-spindle.
Profiler, 2 heads. 24x16.
Punch, 30" throat, ⅝x⅜.
Rolls, 9', a. c. motor driven.
Shaper, 20" American, used 6 mos.
Shear, 10'x¼" heavy, motor drive.
Shear, 6'x¼" capacity, heavy duty.
Shear, 42" Niagara power.

FOR SALE BY

Nelson Machinery Co., 123 N. Pearl St., Green Bay, Wis.

Compressors, 3 Gardner Rix 6x6 vertical duplex.
Drill, Barker 25", sliding head, new.
Drill, 3' Hilbert radial.
Grinder, crank, Landis 18"x68".
Lathe, Gardner No.4 polishing, b.b.
Miller, No. 3 Cincinnati universal.
Punch & shear, single, W-W. No.14.
Tanks, 60x18' pressure storage (2).

Boilers, Engines, Transmission, Woodworking Equipment.

FOR SALE BY

Lee Machinery Company

3171 Bellevue Ave., - - - Detroit, Michigan

Drill press, 22" Wiegle.
Drill, 4' Mueller radial, gear box drive.
Lathe, 18"x8' Whitcomb-Blaisdell, with 4-jaw independent chuck.
Lathe, 16" Blount pattern makers, with compound rest.
Mill, No. 6 Whitney hand.
Press, No. 3 Verdin Kappes Verdin inclinable.
Press, No. 1½ Bliss toggle, double stroke.

USED AND REBUILT MACHINERY

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

Lathe, 24"x16' Schumacher & Boye.
Milling mchs., plain and universal.
Planer, 42"x42"x8' Gray, 2 heads.
Pipe machine, motor driven.
Spinning lathes, Pryibil 22"—44" extension.
Turret lathes, W. & S. No. 2 univ.
Tapper, Garvin No. 2 automatic.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Beaders, No. 8 Pettingell, 42" thrt.
Cut off mchs., Nutter & Barnes.
Drill, 22" Barnes, sid. hd., b.g., p. f.
Drill, horizontal radial, Nos. 2 & 3 Barnes.
Grinders, emery, St. Louis & Western, 50 new at 50% discount.
Grinders, plain, No. 12 B. & S.; 10x36" Norton; 5x18" Ott.
Grinder, tool post, Hisey.
Grinder, cylinder, No. 60 Heald.
Grinder, universal, No. 12 B. & S.
Hammer, size A United, 50 lbs. m.d.
Keyseater, No. 2 Davis.
Lathe, 29"x8' Lodge & S., q. c. g.
Lathes, 16"x8' Monarch, q. c. g.
Lathes, No. 5A Potter & Johnson.
Motors, 1, 3, 5, 7½, 10, 15, 22 h. p., 3-ph., 60 cy., 220 v.
Miller, No. 4 Garvin plain.
Planer, 60"x60"x20' Niles, 2 heads.
Press, No. 5 Stiles & Parker, grd.
Punch & s., No. 6 L & A, 12" thrt.
Shaper, 24" American.
Shear, rotary splitting, No. 134 Mashalltown, 4" throat, ¾" cap.

Full Line of P. S. & W. Sheet Metalworking Machinery.

FOR SALE BY

J. C. Ross, - - - - Lorain, Ohio

Air compressor, 10x10 Ingersoll-Rand Class M. E. I., 36"x72" air tank...$300.
Automatic cutter, 36" Becker-Brainerd with all gears..... 300.
Blanking Press, large Farrell Foundry & Machine Co., about 100" between housings, 8" crankshaft, double pitman, 2½" stroke, heavily back geared..... 1200.
Bolt cutter, 1½" Acme, full set taps & dies, lead screw, very good cond. 175.
Boring machine, automobile cylinder, Beaman & Smith, 2-spindle, with countershaft ..... 150.
Boring mill, 3077 Rockford, o. s., 3" spindle, 24x72" table, double friction countershaft..... 300.
Drills, No. 5 Fox, multiple spindles, double heads, q. c. g., cast iron box type, extra table, one having ten three-fourths spindles, condition very good, (2), the pair ..... 1000.
Gear hobbing machine, Leeds-Bradner, with gears and countershaft..... 200.
Grinder, Gisholt automatic, power, belt drive ..... 100.
Grinder, No. 2 Landis universal, complete with countershaft..... 300.
Lathes, Fitchburg 3½x8 Lo-Swing, r. and p. feed, all attachments; 3½x6 Lo-Swing, head and c. s., 24x10 steel pulley, very good condition, ea. 150.
Lathe, engine, 27x10' heavy Fifield, four-jaw chuck..... 200.
Milling machine, Brown & Sharpe old style, complete with index head, vise, arbors and some cutters..... 250.
Piston and piston ring turning machine, Gridley semi-auto., with c. s.... 300.
Screw machine, Chicago, very good operative condition..... 100.
Slab miller, Ingersoll 24x24x12, serial No. 771, 1 vertical head, 2 side heads, pump, countershaft, condition very good..... 1000.
Turret lathes, 3x36 Jones & Lamson flat, equip. for boring and chuck work, double friction countershaft, very good order, (4) each ..... 150.
Turret machine, small Warner & Swasey, some parts missing..... 75.

WOODWORKING MACHINES.

Band saws, 36", in good operative condition, (2) each.....$ 50.
Jointer, 8" universal..... 75.
Jointer or woodworker, 16" J. A. Fay Co. univ. round and square head 175.
Molder, 8" 4-side, J. A. Fay complete, very good working condition ... 150.
Rip and cut-off saw, iron frame..... 75.

A great lot of other machinery, too numerous to mention.

USED AND REBUILT MACHINERY

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS, VERTICAL.

14'—20' Betts, extension type.
60" Bullard, single pulley drive.
72" Bullard, single pulley drive.
48" Gisholt, rapid traverse.
42" Bullard, turret head.
42" King modern rapid traverse.
52" Niles-B.-P. turret & plain head.
53" Niles p. r. t. motor drive.
54" Bullard rapid production.
12' Niles m. d., d. c.

BORING MILLS HORIZONTAL.

8" bar Newark, knee type.
5" bar Beamen & Smith floor type.
No. 1 Betts 3" bar, knee type.
8" bar Deitrich & Harvey, floor type.
4½" bar Niles.-B.-P., floor type.
5" bar N.-B.-P. belt dr., col. travel
10', floor plate 16'x11' rapid traverse.
3" bar Lucas single pulley drive.

BOLT AND PIPE CUTTERS.

Acme 1", double head.
Acme 3", single spindle.
No. 2 Merriman 1½" capacity.
2" National single head bolt.
2" Standard, double head bolt.
12" Saunders, pipe belt drive.

COMPRESSORS.

5000' Bury direct connected, a. c.
16"x10" Curtis duplex.
Sullivan horizontal, belt 8"x10"
Garage outfit, motor drive.

DRILLS.

3' Fondick radial, latest, s. p. d.
5' Niles B. P., semi-universal radial, speed box drive, tilting table.
No. 11 Natco, 12-spindles.
No. 25 Foote-Burt, heavy duty.
Barnes 20", all geared.

GRINDERS.

No. 12 Brown & Sharpe plain.
No. 13 Brown & Sharpe plain.
No. 14 Pratt & Whitney vert., surf.
No. 4 Gardner disc, rim wheels.
18" Besly disc.
84" Diamond surface.

LATHES.

72"x40' Sellers, rapid traverse.
54"x24' H. S. and M. quick change.
42"x36' Bridgeford, geared head.
27"x14' American, taper attachment.
26"x24' Schumacher and Boye.
24"x16' Lodge & Shipley, t. a.
24"x12' Reed-Prentice, g. h.
22"x12' Niles oil country.
20"x10' Monarch, geared head.
18"x18' Reed, belt drive.
16"x 8' Lodge & Shipley, b. d.
16"x8' Hendey.
14"x6' Hendey.
3A Warner & Swasey turret.

MILLING MACHINES.

No. 3 Cincinnati plain.
No. 3 Garvin hand miller.
No. 4 Cincinnati high power.
No. 2B Brown & Sharpe, heavy.
No. 3B Brown & Sharpe, heavy pl.
No. 14A Garvin dividing hds., comp.

PLANERS.

96"x72"x24' D. & H. openside.
72"x72"x18' Pond, rev. motor drive.
60"x48"x14' Cincinnati, gr. box, m. d.
48"x48"x16' N. B. P., rev. m. d.
52"x36"x22' N. B. P., rev. m. d.
42"x42"x30' new Niles-Bement-Pond.
42"x42"x26' N. B. P., rev. m. d.
30"x30"x16' Gray, 3 heads.
22"x22"x4' Whitcomb, 1 head.

PUNCHES AND SHEARS.

No. 5 Hillis & Jones 48" th., m. d.
No. 2 Hillis & Jones 20" throat.
No. 4 Hillis & Jones double, 48".
No. 4 Hillis & Jones horiz., 1½"x1".
No. 60 Quickwork rotary.
Pels, triple combination.

SHAPERS.

16" Cincinnati, belted m. d.
16" Worcester, b. d.
16" Kelly, b. d.
20" Kelly, b. d.
24" Gould & Eberhardt.
28" American gear box.

MISCELLANEOUS.

Bending rolls, 12' Niles, ½ cap.
Boring bars, portable, 4" Underwood, 8' & 12' long, new.
Chain blocks, 1-ton with trolleys(5).
Cold saw, 60" Newton, m. d.
Core wire straightener, ¼" to 5/16".
Flanging clamp, 12' all steel.
Gear cutter, No. 2 Bilton.
Hammer, steam, 400 lb. Chambersb.
Hoists, 2-ton Yale & T. Triplex, (3).
Hydraulic forging press, 1200 tons.
Riveter, Allen pinch type.
Shear, squaring, Ohl 8'-3/16" cap.
Time clocks, shop (12).
Wheel press, 300 ton Woods.
Wheel press, 150 ton Cardwell.

FOR SALE BY

Tinners Machinery Co., - - 601 W. Monroe St., Chicago, Ill.

Brake, 8' D. & K. power, 3/16" cap.
Drill, Moline hole hog, 8-spindle.
Press, No. 103 V. & O. geared.
Presses, No. 5 Niagara o. b. i. (3).
Shaper, 28" G. & E. b. g.
Shear, 63" Niagara gap, 16 ga.
Shears, sq., 53" Niagara 14 ga.
Shear, sq. 10' 2" cap.
Welder, spot, Am. Elec. 12½ k. w.
Welder, spot, Toledo 25 k. w.

FOR SALE BY

A. M. Stoehr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Bolt cutter, 3-spdl. Acme, 1" cap.
Boring mill, Lucas horizontal, 3" bar, single pulley drive; 60" Bullard motor drive, 220 v., 60 cy., 3 ph.
Bulldozer 75-ton Lourie hyd.
Grinders, Nos. 26-18" Besly double spindle disc, complete; Standford centerless, arranged for motor dr.
Hammer, 800 lb. Erie, drop board.
Miller, 70"x22' Sellers planer type, 5 heads, heavy duty.
Planers, 56x56x12' Gray, 2 heads; 60x60x18' Gray, 2 heads.
Press, Bliss, arch., 2" stroke, 28" bet. column; R. & K. dbl. ck., 36" bet. column, roller feed, 2½" stroke.
Presses & pumps, hydraulic, 300 ton
Perrin, 2-15 ton, comp. with pumps.
Punch and shears, No. 8 Whiting; 36" thrt., arct. jaw, motor drive.
Riveters, stake, No. 6 Whiting; Nos. 3-A, 4-A & 5-A, high speed.
Rolls, 42" Int. type bending, ⅜" cap.; 8' Pyramid type, ½" cap.; 12' bending, (not drop end) cap. 1½".
Shears, alligator, D. & K., all steel.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building, - - - Pittsburgh, Pa.

Air compressor, 8x8" Bury, 129 ft.
Bolt cutters, 1½", 2", 2½", 4" Landis.
Bolt cutter, 2" National dbl.hd.m.d.
Boring mills, 30" to 16'.
Bulldozer, No. 27 W. & W.
Drills, 14" to 38".
Drill, mult., No. 5 Fox, 10-spindle.
Drill, radial, 4' Dreses.
Drill, radial, 6' Prentice, s. p. d.
Flanger, McCabe, ⅞" capacity.
Gear cutters, spur and bevel.
Gear cutter, spur, No 6 B. & S.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel, b. d.
Grinder, No. 1 Landis, 10"x20" univ.
Grinder, 12"x96" Norton, b. d.
Grinder, disc, No. 53 Besly.
Grinder, No. 16 Blanchard.
Hammer, 100 lb. Bradley, upright.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammers, steam 600 lb. to 3000 lb.
Hammers, board drop, 1000 lb.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, 48"x20' Bridgeford, grd. hd.
Lathe, turret, 26" Libby.
Miller, plain., No. 5 Brown & S.
Miller, univ. No. 3 Brown & S.
Miller, slab, 24x20x14' Ingersoll.
Pipe machines, 2½" to 12".
Planer, 36"x36"x10' Cincinnati, 2 hds.
Planer, 48"x42"x12' Cincinnati, 2 hds.
Planer, 96"x96"x20' Pond, 4 hds., m.d.
Planer, o.s. 42"x42"x12' Detrick & H.
Planer, rotary, 48" Cleveland.
Press, geared, No. 34 Toledo.
Press, No. 37½ Bliss, s. s., 6" stroke.
Press, toggle, No. 1½ Bliss.
Press, wheel, 400-ton Niles.
Punch, hor., Cleveland, 1" thru 1".
Punch & s., 30" thr., L. & A. 1½" thru 1".
Punch & s. Clev. 36" arch jaw 1½-1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, Hanna, 24" reach, 30-ton.
Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolling mill, 6"x10" Standard.
Rolls, bending, 10'x¾", Bertsch.
Saw, cold, 24" Espen-Lucas.
Saw, hack, No. 7 Atkins, 8"x8".
Shaper, 24" Cincinnati.
Shear, double angle, No. 1 L. & A.
Shear, alligator, Lewis 1½" square.
Shear, alligator, United, 5"x5".
Shear, bevel, Lennox ⅞".
Shear, guil. No. 0 H. & J., 1½" round.
Shear, rot., No. 110½ Bliss, 3/16" cap.
Shear, rotary, No. 3 Quickwork ⅝".
Shear, rotary, No. 6 Quickwork ¾".
Shear, squar., 7'x¾" Canton, b. d.
Shear, 10'x3/16" W. & R., m. d.
Shear, squar., 30"x18 ga. Toledo, b. d.
Straightener, bar, No. 4-D K. & R.
Straightener, beam, No. 4 H. & J.
Testing machine, 100,000 lbs. Riehle.
Upsetters, 1½" to 5".

FOR SALE BY

Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17' 44" Bement-Miles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
32"x15' American, cone type.
27"x12' Bullard.
26"x16' 6" American, q. c. g., grd. hd.
26"x11' Wickes, q. c. g.
28"x10' Niles, q. c. g.
19"x10' Draper, patent head.
18"x10' Rahn-Larmon, q.c.g., taper.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x 6' South Bend, plain change.
15"x 8' Sidney, q. c., d. b. g., t. a
14"x 6' Springfield, latest type, tool room type, t. a.
14"x 6' Lodge & Shipley, patent head, taper, pan bed.
14"x8' Lodge & Shipley, q. c.

TURRET LATHES.

3½x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20x7' Bridgeport, 2½", h. s.
19"x7' Fay & Scott, back grd.
No. 22½ Garvin Monitor.
14"x 6 Warner & Swasey.
No. 3 Foster sc. machines 1-5/16" wire feed, (2).
1½"x9" Cincinnati-Acme, wire feed.
No. 4 B. & S., bar feed, all auto. fds.
No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES.

48" Almond, sens. radial, post type.
40" Barnes horizontal radials, (2).
26" Aurora, sliding head.
24" Foote-Burt heavy duty.
21" Aurora, b. g., p. f.
No. 1½ Knight milling & drilling mch.

MILLING MACHINES.

No. 5 Cincinnati, table 9½x50½".
No. 5 Brown & Sharpe vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.
No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 4 Becker - Brainard. vertical rotary table.
No. 5-C Becker vert., rotary table.

PLANERS AND SHAPERS.

48"x37"x9' Sellers, 2 heads.
48"x48"x12' Gray, 2 heads.
42"x36"x14' Cincinnati, 4 heads.
28" Woodward & P., crk., gear box.
48" Morton draw-cut shaper.
30"x30"x8' American, 1 head.
15" Lodge & Davis shaper.
21" Milwaukee, b. g.

BORING MILLS.

24" Bullard, rapid production.
Boring mill, car wheel, 60" Newton.
42" Bullard, 2 swivel heads, (2).
Boring, drilling and milling machine, 17½' Bement-Miles horiz.
Boring mill, No. 1 Sellers hor., 2¾" bar.

PIPE AND BOLT MACHINES.

4" & 8" Eaton, Cole & B., pipe.
6" Cox, quick opening dies.
4" Armstrong, No. 00 pipe machine.

MISCELLANEOUS.

Arbor press, No. 8 Greenerd, 36" bet. columns.
Centering mche., 5" Whiton, dbl. sp.
Cold saw, No. 6 Nutter & Barnes.
Elec. hoist, 1-ton Link Belt, 2ph.a.c.
Electric hoist, 1-ton Shepard, 220 v., d. c., (2).
Generator, No. 100 Oxweld acetyl.
Grinder, 13½"x3' Landis universal.
Grinder, No. 8 Diamond, double end, heavy type.
Grinder, disc, No. 17 Besly.
Grinders, several dbl. end electric.
Hammers, 15, 25 & 40 lbs. Bradley helve.
Hammer, 50 lb. Little Giant, belt dr.
Hammers, 60 lb. Bellefonte upright, 2.
Keyseater, Morton 18" stroke.
Keyseater, No. 4 Catlin, m. d.
Punch or gate shears, 72" Cleveland multiple, 15" throat.
Punch press, No. 2 Cons., flywheel.
Punch & shear, No. 4 Long & A., double end, 24" throats.
Punch and riveters, new Doty (2), one 35" stake and one 30½" stake.
Punch presses, all sizes, (55).
Punch and riveter, new Doty, 30" stake.
Riveter, 3/16" Grant, on column.
Riveter, air, 6' gap Allen, cap. 1½".
Riveter, air, 6' Allen, cap. ⅝".
Saw, No. 7K Atkins Kwick-Kut.
Rolls, 4' drop end corrugated.
Saw, Q. M. & S. No. 4-B universal, 23" blade.
Shear, 52" P. S. & W. pwr. squaring.
Shear, 8' Ohl, No. 20 ga.
Slotter, 14" Niles.
Slotter, 24" Rhodes vertical.
Tire press, hyd., 60-ton Defiance.
Tooth rounding machine, S. & S.

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USED AND REBUILT MACHINERY

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Boring mill, No. 1½ Beaman Smith horizontal, floor type, 3½" bar.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill, 32" Aurora, motor driven.
Drill, radial, 6' Dreses full universal.
Gear shaper, No. 35 Fellows, belt or motor.
Grinder, 14"x96" Norton plain, belt.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 6000 lb. Chambersburg, steam drop, used.
Hammer, 5N Nazel, m. d , cap. 6x6.
Lathe, 16—18½"x9' Lehmann, q. c. g , belt driven.
Lathe, 30"x26' Lodge & Shipley, belt, q. c. g.
Lathe, 27"x10' LeBlond, tur. attach.
Lathe, 30"x30' Harrington.
Lathe, 36"x20' Sidney, q. c. g.
Miller, No. 2-B Rockford universal, table 38"x9", q. c. g. and equip.
Milling mche., No. 3 Garvin duplex.
Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36"x36"x24', Bement, 4 hds.
Press, No. 73½ Bliss trimming press.
Press, Chambersburg trimming, mtr. drive, weight 12000 lbs.
Press, No. 37 Niagara, 1100 lb. fly-wheel, solid back.
Rolls, 6' of 3/16" Beloit drop end.
Shaper, 20" Bement Niles, heavy duty, traveling head, one head.
Shapers, 16", 20" and 24" Gould & E.
Shapers, 20" Stockbridge, with speed box, (2).
Shear, Buffalo bar, cap. 2" round.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, - - - N. S. Pittsburgh, Pa.

Automatics, Nos. 52 & 55 Acme.
Blower, No. 5 Champion, 64" outlet.
Blower, Amer. pressure, 461 cu. ft.
Bolt cutter, ½" Acme, class "A," 2-sp.
Bolt cutter, 1½" Acme, double head.
Bolt cutter, 2½" Acme, single head.
Boring mill, No. 44 D. & H., floor type, 3½" bar.
Boring mill, Niles horiz., 4½" bar.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 51" Niles, 2 heads.
Bulldozer, No. 4 Williams & White.
Brake, 48" Keane, capacity ⅜".
Broach, No. 3 LaPointe.
Buffers, 10 h. p. 220-3-60, 3600 r.p.m.
Car wheel borer, 42" Ridgeway.
Cutting-off machine, 6" Hurlburt-R.
Drills, 26" Barnes, sliding head.
Drills, 36" Snyder, sliding head.
Gear cutter, 36"x10" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, 5 h. p. U. S. double end, 220-3-60.
Grinder, Oliver drill, ⅜" cap., m. d.
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 16 Hesly, double disc.
Hammer, 80 lb. Bradley cush. helve.
Hammer, 300 lb. Bradley upright.
Lathe, 12"x 6' Seneca Falls, q. c. g.
Lathe, 12"x10' Davis tool rm., q. c. g.
Lathe, 14"—28" Fay & Scott gap.
Lathe, 18"x10' W.-B., g. h., s. p. d.
Lathe, 20"x10' Hendey, g. h., m. d.
Lathe, 24"x12' Boye & Emmes, q. c. g.
Lathe, 30"x12' Boye & Emmes, q. c. g.
Miller, No. 3 Kempsmith plain, v. a.
Miller, No. 4 Hendey plain, s. p. d.
Miller, No. 4 Brown & Sharpe univ.
Miller, No. 5 Cincinnati pl., s. p. d.
Miller, Gooley & Edl. Briggs type.
Motor, 5 h. p. Wagner, 220-1-60.
Motor, 3 h. p., Wghse., 220-1-60.
Pipe machine, ½" to 2" Williams.
Pipe mche., Jarecki 1½" to 6", m. d.
Pipe mche., E., C. & B., 2½" to 8".
Pipe machine, Merrill, 2½" to 12".
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 16 Bliss horning.
Press, No. 54 Toledo trimming.
Planer, 30"x30"x8' Cleveland opens.
Planer, 30"x30"x12' Gray, 1 head.
Planer, 38"x38"x12' Gray, rev. m. d.
Planer, 48"x48"x12' Betts, 3 heads.
Punch, Wickes, 48" thrt., cap. 1½"x1".
Radial drill, 3' Fosdick, cone drive.
Radial drill, 4' Mueller plain, (2).
Radial drill, 6' Bickford plain g. b.
Saws, No. 5 Marvel high spd., 6x6, (2).
Saw, band, 36" American.
Saw, cold, 14" Cochrane & Bly.
Saw, American metal swing, m. d.
Shaper, 24" Cincinnati, b. g. crank.
Shaper, 24" Gould & E., b. g., crk.
Shear, 120"x⅜" Garrison squaring.
Slotter, 15—19" Dill.
Tapper, ⅜" Webster & Perks, 1-spdl.
Tapper, 1½" Webster & Perks, 2-spdl

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

Beaman & Smith vert. and horiz.
30" Bullard plain.
32" Colburn.
No. 2½ Rockford univ., vert. att.
No. 3 Kempsmith plain.
No. 3 Cincinnati plain.
No. 1½ Cincinnati univ.
No. 2 Brown & Sharpe univ.
No. 34 Ohio late end. gear type.
No. 1 Brown & Sharpe univ.
No. 2 Becker vertical.
Gooley & Edlund, 2 sizes (4).
No. 25 Becker.
Smaller sizes B. & S., Rockford, etc., hand and power feed (12).

LATHES.

30"x14' LeBlond, q. c. g., tur. att.
28"x14' Wickes semi-q. change.
24"x 8' LeBlond q. c. g., tur. att.
20"x 8' American q.c.g., tap. rel. att.
20"x 8' Advance q. c. g.
20"x 8' American q. c. g.
18"x 8' Sidney q. c. g.
18"x 9' Chard q c. g.
20"x10' Springfield, g. hd., sgl. p.
18"x 9' Hamilton q. c. g.
16"x 8' LeBlond q. c. g.
16"x 6' American, q. c. g., g. hd.
16"x 6' American q. c. g.
16"x 6' Sidney q. c. g.
16"x 6' Morris, q. c. g.
14"x 5' LeBlond, g. hd., prod.
14"x 6' and 16"x8' Hendeys.
W. & S. double key lathe, 6 prec. bench, large var. different sizes.

SHAPERS.

24" Stockbridge, geared.
24" Hamilton, g., crank.
20" Rockford, g., crank.
18" Hollingsworth, g., crank.
16" Smith & Mills, g., crank.
16" Potter & Johnson.
16" Whip crank.
14" Steptoe crank.

SCREW MACHINES AND TURRET LATHES.

No. 2A Warner & Swasey.
No. 6 W. & S., b. g., fr. hd. (3).
No. 4 Warner & Swasey univ. (3).
No. 4 W. & S. p. cross fd.
No. 4 W. & S. b. g., fr. hd. (6).
No. 4 Warner & Swasey plain.
No. 2 W. & S. plain, p. f.
No. 2 Warner & Swasey plain.
2" W. & S. hollow hex. turret.
No. 1 Warner & Swasey.
No. 2 Brown & Sharpe auto. (2).
No. 0 Brown & Sharpe auto. (2).
No. 00 Brown & Sharpe auto. (12).
Brown & Sharpe formers (15).
Brown & Sharpe semi-auto. (4).
No. 53 Nat-Acme 4-spdl , motor, (5).
2" Gridley, 4-spdl., auto. (3).
5-spdl. New Britain automatic.
Foster, B.& O., Acme pl.& Fox (20).
¾"-1¼"-3¼" Cleveland auto.
2¾" Jones & Lamson (3).

PRESSES AND SHEARS.

8' Toledo sq. shear, 3/16" cap.
No. 51 Toledo geared, 6¾" str.
No. 5P Ferracute, 8600 lbs.
No. 34 Swaine geared, 5600 lbs.
No. 71 Swaine double crank.
60"x16 gauge Bertsch power square shear, 15" throat.
10'x16-14 gauge Ohl g. sq. shear.
No. 1P Ferracute (2).
Nos. 0 and 1 Consolidated.
Obermayer sprue cutter.
20" Quickwork rot. shear.
60" Pettingell rot. shear.

DRILL PRESSES AND RADIALS.

42" American radial, rev. att.
36" American sensitive.
32" Superior M. Co., b. g., gear box.
30" Snyder, b. g., gear box.
26" Aurora, sl. hd., g. b., tapp. (2).
16-spindle Nat. Auto. Mch. Co.
4-spindle Turner turret.
1-spindle Sipps, comp. table (3).
5-spindle Henry & Wright.
2-spindle Avey, tap. att (3).
Single spindle Avey, ⅝"-4" (2).
2-spindle Henry & Wright, 1" cap.
20" Baker Bros.
20" Barnes, camel back.
Large variety, different sizes.

GRINDERS, BOLT AND GEAR CUTTERS, ETC.

No. 3 W. & M. disc, 18"-24"-30"-40".
Landis, Acme bolt cutters ¾"-1½".
B. & S. cutter and reamer grinder.
12"x72" Brown & Sharpe cyl.
Nos. 11 and 12 Brown & Sharpe cyl.
3"x18"-6"x32" Norton cyl.
8"x32" Landis
Landis cam grinder (2).
No. 25 Heald & No. 33 B. & S. cyl.
No. 13 B. & S. gear cutter (2).
Garvin die slotter.
4"-6" Waltham bench gear cutter.
8-spindle valve grinder.
Barker chucks, 2 and 3 jaws.

FOR SALE BY

McMullen Machinery Company, - - Grand Rapids, Mich.

Automatics, ½" Cleveland, (2).
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.
Grinder, Wisconsin universal.
Lathe, 2½x26 Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville AA.
Press, No. 5½ Consolidated geared.
Press, No. 7 Consolidated geared.
Welders, No. 7-C Thomson, butt.

FOR SALE BY

W. P. Little Co., - - West 9th & Front Sts., Cleveland, O.

PLANERS.

24"x24"x5' Gray.
26"x26"x8' Gray.

POWER HAMMERS.

50 lb. Beaudry.
75 lb. Beaudry.

SCREW HEAD SHAVING MACHINES.

2 No. 2 Garvin screw head shaving machines, with screw feed.

BOLT CUTTERS.

½" Landis cone drive.
⅝" Acme rapid type.

MISCELLANEOUS.

15 ton metal wood hydr pneu. press.
S-24 Yoder rotary shear.
2"x24" Jones & Lamson turret.
No. 60 Heald cylinder grinder.
E. G-22 Ferracute geared arch pr.
No. 13 Niagara circle shear.
150 other tools in stock.
Send us your inquiries.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Air compressors, Bury 12x12.
Arbor presses, Kames No. 6.
Bolt threader, Acme 3 hds. 1⅝" cap.
Chain hoists, Yale & Towne 1½ & 2-ton
Demagnetizer, Walker.
Disc grinder, double, Besly No. 14.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G 1-sp. h.s., b.b. floor.
Drills, H. & W., Kokomo 1-spdl., Sipp 1 & 2 spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g., & tap.
Filing machine, Rearwin, floor type.
Furnace, Holcroft 92 k. w. annealing.
Gear cutter, No. 3 B. & S., 26".
Grinder, Heald No. 60 cylinder.
Grinders, Ott 5x18"; Landis No. 1 universal; Modern inte.; LaSalle No. 2 surf.; B & S. No. 2 surface.
Hack saws, 4x4, 6x6 & 2 Racine Jrs; Atkins 4x4"; Racine 6x6"; Atkins 8x8 h. s., Marvel No. 2.
Keyseater. Baker No. 2.
Lathes, South Bend 24"x14'; South Bend 21"x12" q.c.g.; Davis 22"x10'; Hendey 14"x6'; Lehmann 25"x9' q. c. g.; LeBlond 19"x8'; q. c. g., American 20"x9'; Monarch 16"x8', Monarch 18"x8', all q.c. g.; 40 othre assorted sizes.
Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker "SD" vertical, rotary table, 17200 lbs.; American No. 1½ universal; B. & S. No. 3 vert., s.p.d., with rotary tbl.; Ohio 34; LeBlond No. 3-H plain; Brown & S. No. 3 pl.; Cincinnati; No. 2 pl. and Becker No. 4-B vert; B. & S. No. 3 B plain, s. p. d.; Kempsmith No. 3 universal; No. 1 Kempsmith plain; Kempsmith No 1 univ., B. & S. No. 1-D univ.
Pipe machine, Oster 2", Curtis 3", motor dr; Merrill 4" belt drive; B. & K. 8".
Planer, Gray 28"x28"x6', 1 head.
Punches, Wetterhahn 18", throat ⅝" in ½"; W. & W. No. 17 punch and s.
Punch presses, Swaine No. 29 o. b. i. Willard No. 4-A o. b. i., Bliss No. 19 o. b. i., (2), Federal No. 1 & 2.
Pyrometer, Thwing elec., with rec.
Screw machine, Gridley 1-spdl. 2½" auto.; Cleveland 1½" auto.; P. & W. No. 2½ hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Foster No. 0; Bardons & O. No. 7; National-A. No. 52 auto .4-sp., m.d. B. & S. No. 00 automatic.
Shapers, Whipp 16" and 20"; Cinti. 20", b. g.; Ohio 20"; Ohio 16"; American 16" b. g.; S. M. 16"; Steptoe 14" Barker 24" b. g.; American 24" b. g., Queen City 24" b g.
Square shears, Kutscheid 30" 14 ga. power, geared, 15" gap, 10 gauge.
Shears, 60" thrt. rotary slitting (2).
Welders, butt, Federal, ⅜" rds.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe.
Drills, 4-spdl., 12" and 14" L. & G.
Drills, 6-spindle Allen, h. s.
Gear cutter, 4" Waltham, (new).
Grinders, surface, No. 22, Heald.
Hobber, Nos. 3, 12-B & C, 4 Adams.
Miller, No. 13-B B. & S., production.
Miller, No. 0Y Brown & Sharpe.
Radial, 4' American sensitive.

Partial list; send us your inquiries.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Air compressor, 8x8 Chicago, n.s.b.
Air compressor, 12 cu. ft. Natl. belt.
Bolt cutter, 1¼" Morgan, double hd.
Bolt cutter, 1½" Acme, triple head.
Boring mill, 24" Bullard, side hd. m.d.
Boring mill, 42" Bullard, 2-heads.
Boring mill, 16' to 36' Niles extension.
Boring mill, 54" Bement-M., 2 hds.
Boring machine, Rockford No. 2 horizontal, 3⅜" bar.
Channeling mach. No. 3C, K&R.
Derrick, steel, stiff lg. 15-ton, 60' boom.
Drills, 26" Barnes & Rock'd, b.g., p.f.
Drill grinder, "WPEL," 3/60/220.
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Gear and pinion cutter, No. 3 Sloan & Chace.
Gear cutter, No. 6 Brown & Sharpe.
Grinder, No. 18-D Rowbottom.
Grinder, No. 24 Landis, 16"x48".
Grinder, No. 60 Heald, 19" arm.
Grinder, surface, No 2 B & S., m d.
Grinder, Am. d. e. 7½ h.p. 3/60/220.
Hack saw, Atkins, cap. 8"x8".
Hack saws, No. 5 Marvel, 6"x6".
Hack saw, 12x15" Racine, g.b., m. d.
Hammer, 2500 lb. Chbg., s.f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammer, 10,000 lb. Erie steam drop.
Hammers, stm. s.f. 600, 1100, 1500 lbs.
Hammers, 40 lb. and 80 lb. Bradley.
Hoists, chain, 1, 2, 3 and 6-ton.
Keyseater, No. 2 Davis.
Keyway cutter, 24" Morton, cap. 2½".
Lathe 10'x6½' Myers, chuck att.
Lathe, 18"x10' L. & S., q. c. g., t. a.
Lathe, 19"x12' Sidney, q. c. g., t. a.
Lathe, 21"x10' Porter, 2" h. s., A-1.
Lathe, 24"x14' Porter, plain change.
Lathe, 24"x10' Putnam, taper attach.
Lathe, 24"x21' New Haven, s. b. g.
Lathe, 30"x16' Lodge & S., q. c. g.
Lathe, 36"x18' Porter, s. b. g.
Lathes, 48"x36' Niles, belt or motor.
Miller, vertical "C" Becker, s. p. d.
Miller, vert. No 4-B Becker, for m.d.
Miller, No. 3-B Milwaukee.
Miller, No. 0 Kent-Smith univ.
Miller, duplex Knight, table 8½x32".
Motor, 8½ h.p. 220 v., d. var. sp.
Motor, 10 h. p. C.-W. 3/60/220/1200.
Mtr., 25 h.p. West. 3/60/220-440/1200.
Motor, 7½ h. p. West. 3/60/440/1200.
Motor, 1 h. p. West. 3/60/440/1200.
Oil separators, ½ & 1½ bu. cap.
Pinion cutter, No. 3 S. & C. 1"x1".
Pipe machine, 4" Williams, m. d.
Pipe machine, 6" Jarecki, s. p. d.
Pipe machine, 10" E. C. & B.
Planer, 24"x24"x6' Gray, 1-head.
Planer, 36"x36"x8' L. & D., 2-heads.
Press, No. 1 Toledo, o.b. i. plain.
Press, No. 52 Ferracute, punch, m.d
Press, No. 18 Bliss, o. b. i. for m. d.
Press, No. 19½ Bliss, o. b. i., a. c. motor, new.
Punch, 30" thrt., 1"x1" m. d., s. e.
Punch & shear, combined, Badger, ⅝x⅝ hand.
Punch and shear, Cleveland e.f. "AJ" for motor, 36" throat.
Punch & shr., 12" thrt., 1¼"x1¼", A.J.
Punch & shr., s.e. 24" thrt. ⅝x⅝, A.J.
Punch and shear, s. e. 6" thrt ⅜x⅜.
Punch, coping, steel plate, 13" thrt. 36" die space, 2 holes 1"x1", m. d.
Radial drill, 2½' Fosdick, t. a.
Radial drill, 3' Dreses-Mueller.
Riveter, Allen, pneumatic, 24x16x10.
Riveter, Allen jaw, 36" cap. 1½".
Riveter, ½" Shuster rotary, belt.
Saw, Burke, 12" blade, capacity.
Screw mach., 8"&10" P & W. pl., w.f.
Screw mch., auto, 1½"x18" Cleve. "B".
Shaper, 16" Am., b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Shear, rotary, Quickwork ⅜", 36" throat, with 60" circl. attachment, motor, 3 ph., 60 cy. 220 v.
Shear, rotary, 12" thrt., cap. 22 ga.
Turret lathe, 13" Gisholt, 2½" h. s.
Turret lathe, 20" Gisholt, 3½" h.s., t.a.
Turret lathe, 2" x 24" J. & L., s. p. d.
Turret lathe, 18" W.&S. friction hd.
Vise, 8" Columbian, plain.

WOODWORKING MACHINES.

Borer, Smith post, No. 451.
Cut-off saw, sw., F.&E. No. 75, m.d.
Jointer, Woods, 8".
Lathe, 18"x12', F.&E., iron bed.
Lathe, F.&E. No. 35 auto bk. kf. ga.
Saw filer, band, Wardwell, "K" m. d.

USED AND REBUILT MACHINERY

FOR SALE BY

Fitchburg Grinding Machine Corporation, - Fitchburg, Mass.

LATHES.

LeBlond 14"x6'.
Reed-Prentice 16"x8'.
Putnam 14"x6'.
Greaves-Klusman 18"x8'.
Perkins threading 21"x10'.

PLANERS.

42"x36"x22' Whitcomb.
32"x36"x16' Whitcomb, 2 heads.
22"x22"x6' Whitcomb.
17"x20"x8' Whitcomb.
30"x30"x8' Powell, 2 heads.

TURRET LATHES.

2½x24" J. & L., bar equipment.
3x36" J. & L., chuck equipment, double spindle.
2½x26" Greenlee.
14" Gisholt.
21" Gisholt.

MILLERS.

No. 5-B Becker.
No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.
24" Reed-Prentice.

RADIAL DRILL.

2½' Dreses.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

Good Machine Tool Bargains.

BORING MILLS.

36" Niles, 2 heads.
42" Bullard, 2 heads.
52" Bickford, 1 head.
4" Lucas horizontal.
3½" Rochester horizontal.
36" American, 2 heads.
48" Niles, 2 heads.
6' Niles, 3 heads.
3" Niles horizontal.

MILLING MACHINES.

2B Brown & Sharpe, heavy.
No. 2 B. & S. universal.
No. 3 Brown & Sharpe vertical.
No. 4 Brown & Sharpe vertical.
No. 4 Brown & Sharpe universal.
3—Cincinnati No. 4 universal.
No. 12 B. & S. plain.

GEAR CUTTERS AND HOBBERS.

No. 3—26" Brown & Sharpe.
No. 12—B. & S., spur and bevel.
13" Schuchardt & Schutte hobber.
No. 4—36" Brown & Sharpe.
18" Gould & Eberhardt hobber.
No. 12 Barber-Colman.

SHEARS AND PRESSES.

Style A Long & Allstatter, 48" shr., ⅛" cap.
No. 3 Toledo inclinable.
No. 30 L. & A. incl.
No. 1 Long & A. punch and shear.
6' and 8' Robinson brakes.
6' Bertsch shear.
19C Bliss, inc.
30-A Bliss, motor drive.
Niagara horning press.

SHAPERS.

15" Ohio; 15" Potter & Johnson; 16" Cincinnati; 16" Queen City; 20" Smith & Mills; 24" Queen City; 25" Smith & Mills; 28" Hollingsworth.

PLANERS.

18"x18"x36" New Haven.
30"x30"x16' Gray.
38"x38"x12' Gray.
24"x24"x8' Pond.
36"x36"x12' Woodward & Powell.
48" Detrick & Harvey open side.

GRINDERS.

18"x96" Norton cylindrical.
Brown & Sharpe surface.
Bath and Walker surface.
6"x20" Webster & Perks.
Heald No. 60 cylinder (2).
16"x72" Brown & Sharpe cylindrical.
14" Pratt & Whitney vertical.
LeBlond, Oakley and Cincinnati tool & cutter grinders.

MISCELLANEOUS.

Automatic, Gridley 2½" 4-spdl
Automatic, New Britain 1⅝"x7", 6-sp.
Automatic, Gridley ⅞"
Automatic, Gridley 1⅛", 4-spindle.
Hammers, William & White, 50 and 130 lbs.
Pipe machine, Curtis 12".
Turret, J. & L. 3-spindle, grd. hd.

Send for the new catalogue.

FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Acetylene generator, 500 lbs. cap.
Drill, radial, 42" Bickford.
Drill, multiple, 10-spindle Gardam.
Furnaces, American hardening.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Grinder, duplex disc and belt.
Lathes, 12" to 26".
Lathes, 9x14 Porter-Cable.
Lathes, 13x4 Adams short cut.
Millers, hand, No. 0 Burke; No. 22 Fox.
Planer, 30"x30"x8' American.
Presses, Niagara, foot.
Rivet spinners, Grant, (4).
Saw, 9x9 Atkins Kwik-Kut.
Screw machine, Greenfield ⅞" cap.
Shapers, 14" Rockford.
Shear, serpentine, Lenox 4".

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St., St. Louis, Mo.

PLANERS AND SHAPERS.

48"x48"x16' Niles, box table.
36"x36"x12' Cleveland openside.
42"x42"x12' Powell, 3 heads.
36"x36"x18' Hamilton motor drive.
30"x30"x 8' Cincinnati.
24"x24"x 6' Powell.
24" Gould & Eberhardt shaper, b. g.
24" Flather shaper, b. g.
20" Smith & Mills, shaper, b. g.
16" Steptoe shaper.

LATHES.

60" New Haven turning.
36"x16' Lodge & Shipley.
24"x10' LeBlond plain change.
20"x20' LeBlond plain change.
18"x 8' LeBlond plain change.
15"x10' Cisco quick change.
14"x 6' Seneca Falls.
12"x 5' Seneca Falls.
14"x 6' Flather quick change.

MILLERS.

38"x30"x8' Ingersoll slab.
No. 1½ Rockford plain.
No. 1½ Brown & Sharpe plain.
No. 7 Becker, Lincoln type.
Hendey, Lincoln type.
Miller & Crowningschild auto. fd.
No. 1 U. S. hand.

DRILLING MACHINES.

3-spindle Allen, h. s.
4-spindle Barr power feed.
3' Dreses radial, (4).
4' Dreses radial.
4' Cincinnati Bickford.
32" Mechanics.
22" W. F. & John Barnes.
20" Champion.

GRINDERS.

No. 1 Diamond surface.
No. 6 Besly double disc.
No. 50 Gardner disc, 30" capacity.
8" Heald rotary, magnetic chuck.
10"x72" Brown & Sharpe plain.
8"x18" Ott.
10"x18" Sterling universal.

BORING MILLS.

No. 1 P. & H. horizontal drill.
No. 3 Niles horizontal borer.
42" Niles, 2 heads.
51" Baush, 2 heads, heavy.
84" Niles, 2 heads, heavy.

SCREW AND TURRET MACHINES.

No. 1 Pratt & Whitney screw mche.
No. 6 Warner & Swasey cone head.
1¼" Acme hand screw machine.
2"x24" J. & L., geared head.
3"x36" J. & L., geared head.
2" Warner & Swasey hollow hex.
2" Pratt & Whitney.

SWAGERS.

No. 1 Dayton.
No. 2 Hess taper roll.

MISCELLANEOUS.

Furnaces, cyanide hardening.
Hammer, Bradley 60 lb.
Hammer, Little Giant 100 lb.
Hammer, Niles steam, 2000 lb.
Jarring machine, U. S. Molding Machine Co.
Presses, Lourie hydraulic, 20 & 30 ton
Punch, horizontal, 1" in 1".
Punch & shear, Cleveland 42" throat.
Punch & shear, Hilles & Jones 48" throat.
Shear, 2" capacity bar.
Shear, Lennox, rotary bevel.
Slotter, 12" Niles.
Welder, butt, 200 amp.
Welder, spot, 20 k. w.

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass.

BUTT AND SPOT WELDERS

Guaranteed to be in perfect condition.

Thomson 20-A-10 butt welder.
Thomson 10-A-7 butt welder.
Thomson 8-A butt welder.
Thomson 2C butt welder.
Thomson 2-A butt welder.
Thomson 25 automatic butt welder.
Toledo 110 spot welder.
Thomson 40-A vert. butt welder.
Thomson 20-A vert. butt welder.
Thomson 10-A vert. butt welder.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Bench lathe, No. 4 Elgin with bench outfit.
Centering mche., 4" Whiton dbl., spindle.
Die filer, No. 3 Barry, floor type.
Grinder, No 3 Oakley, surface.
Grinder, No.183 Wells.cutter & tool.
Grinder, 5"x19" Ott plain.
Grinder, all angle cutter and tool motor drive.
Lathe, 9"x12" Sundstrand prod.
Lathe, 11"x5' Star. c. r.
Miller, No. 3 Oesterlein plain.
Miller, No. 4 Fox plain.
Miller, No. 2 Rockford, plain.
Miller, No. 2 Ohio universal.
Pipe machine, 6" Merrill, belt drive.
Planer 34"x24"x16' Cincinnati.
Press, No. 1 Cons., o. b. i.
Press, No. 1½ Cons , o. b. i.
Press, No. 2 V. & O., o. b. i.
Press, No. 100½ Waterbury, bench type on stand.
Press, No. 3-P Am., Can solid bk.
Press, No. 3 Bliss solid back.
Rivet spinner No. 83 Grant dbl. sp.
Screw mche. No. 1 Foster 13/16" cap.
Screw mch , No. 3 Foster, late type.
Shaper, 16" Steptoe b. g., crank.
Shaper, 16" Queen City b. g., crank.
Shop saw, 6x6 Racine h. s.
Shop saw, 6x6 Peerless h. s.

FOR SALE BY

Randle Machinery Co., - 1733 Powers St., Cincinnati, Ohio

Bending rolls, No. 3 Cleve. ½"x16'.
Bending roll, Hilles & J. ½"x10'.
Bolt cutters, 1½", 2" Acme.
Bolt cutters, 1½", 2" Landis, single and double.
Bolt cutter, 4" Acme.
Boring mill, 10' Niles.
Boring mill, 84" Sellers.
Boring mill, 72" Niles.
Boring mill, 60" Niles.
Boring mill, 36" Bullard, r. p. (3).
Boring mill, 42" Bullard.
Brake, hand, 8'x16 ga. Robinson.
Brake, hand pwr., 10' ga. Robinson.
Brake, hand, No.4 Dreis & K. 16ga.
Gear cutter, Whiton.
Grinder, No. 41 Besly disc, m. d.
Grinder, 14" Pratt & Whitney vert.
Grinder, Bridgeford horizontal.
Keyseater, No. 1 Davis.
Keyseater, No. 2 Mitts & Merrill.
Keyseater, No. 4 Mitts & Merrill.
Lathe, 16"x 8' American, q. c.
Lathe, 19"x 8' LeBlond, q. c.
Lathe, 20"x14' Reed, l. c.
Lathe, 24"x14' Pond, l. c.
Lathe, 24"x12' LeBlond, q. c.
Lathe, 24"x16' Rahn-Larmon, q. c.
Lathe, 25"x14' Sidney, q. c.
Lathe, 30"x32' Pond, l. c.
Lathe, 24"x24' Fifield, l.c.
Lathe, 24"x30' Lodge & S., q. c.
Lathe, 32"x18' American, q. c.
Lathe, 36"x16' Fay & Scott, l. c.
Lathe, 36"x16' Lodge & S., q. c.
Lathe, 44"x22' Fifield, l. c.
Lathe, 48"x20' Pond, l. c.
Miller, No. 2 LeBlond plain.
Miller, No. 2 Cincinnati plain.
Miller, No. 4 Cincinnati plain.
Miller, No. 2 Cincinnati universal.
Miller, No. 3 Brown & Sharpe univ.
Miller, No. 4 Brown & Sharpe univ.
Planer, 24"x24"x 6' Gray, 1 head.
Planer, 26"x26"x12' W .-B., 2 heads.
Planer, 36"x38"x16' Gray, 3 heads.
Planer, 48"x48"x16' D. & H. opens.
Planer, 48"x48"x20' D. & H. opens.
Radial, 2½' American plain.
Radial, 3' American plain.
Radial, 3' Mueller plain.
Radial, 4' Bickford plain.
Shaper, 14" Steptoe plain, crank.
Shaper, 16" Smith & Mills pl., crk.
Shaper, 24" Cincinnati b. g., crank.
Squar.shr. 3/16"x120" Loy-Nawrath.
Squaring shear, Bertsch 10 ga. x 60".
Wheel presses, 150, 200 and 250 ton.

Also many other tools of various sizes and types.

FOR SALE BY

J. Bleser Mfg. Co., 16th & Madison Sts., Springfield, Illinois

Lathe, Niles B. 36x12, s. c. g.
Lathe, Bridgeport 26x12, s. c. g.
Lathe, Prentiss 30x16, s. c. g.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 14"x6' Monarch, q. c.
Miller, No. 2 Hendey universal.
Miller, Cinti. No. 3 univ., O. type.
Millers, bench, No. 3 Burke; Rockd.
Radial drill, 5' Bickford.
Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Carlson Machinery Co., Inc., - - - Davenport, Iowa

Boring mill, No. 2 Rockford horiz.
Boring mill, No. 3-A universal hor.
Centering machine, 4" Pratt & W.
Drill, 36" New Haven sl. hd.
Drill, ¾" Sipp h.s b.b., 8" overhang.
Grinder, 10x20 Landis plain.
Grinder, 10x20 Landis universal.
Grinder, No. 8 Besly disc.
Grinder, No. 14 Besly disc.
Grinder, No. 2 Oakley univ., t. & c.
Hobber, No. 12 Barber-Colman.
Hobber, 24" Schuchardt & Schutte.
Lathe, 13"x5' Sheppard.
Lathe, 16"x8' Carroll-Jamieson.
Lathe, 18"x6' Lodge & Shipley.
Miller, No. 2 Hendey Lincoln type.
Miller, No. 1½ Cincinnati univ.
Miller, No. 2-B Brown & S. pl.
Miller, No. 34 Ohio pl., div. hd.
Press, No. 4 Toledo o. b. i.
Press, No. 5 Toledo o. b. i.
Press, No. 29 Swaine o. b. i.
Riveter, ½" Cincinnati spinning.
Shaper, 16" Smith & Mills.
Shaper, 20" Smith & Mills.
Shaper, 20" Cincinnati.
Turret lathe No. 1 Pratt & W.
Turret lathe, No. 4 W. & S. pl.
Turret lathe, No. 6 Warner & S., p. f. to crge. and turret.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

GEAR CUTTING MACHINES.

No. 3 Brown & Sharpe, 26x8, spur
No. 2 Bilton automatic gear milling machines.

GRINDERS.

No. 12 B. & S. plain, self-cont., 8x36.
No. 11 B. & S. plain, 4x30.
No. 2 Brown & Sharpe surface.
No. 1 Brown & Sharpe surface.
No. 1 Norton tool and cutter.
20" Blount wet tool.

LATHES.

30"x20' Fitchburg.
30"x14' Lodge & Shipley q. c. g.
22"x26" Lodge & Shipley grd. hd.
16"x 8' South Bend with gap, taper.

MILLING MACHINES.

No. 4-A Brown & Sharpe universal.
No. 4-B heavy B. & S. plain.
No. 4 G. S. Hendey plain.
No. 3 G. H. LeBlond heavy plain.
No. 2 Brown & Sharpe vertical.
Ingersoll adjustable rail 48"x30"x10'.
Newton slab 28"x24"x13'.

PLANERS AND SHAPERS

72"x48"x12' Pond, 4 heads.
54"x42"x14' Gray, 3 heads.
36"x36"x10' Woodward & Powell, heavy, m. d.
32"x32"x 8' Powell.
24"x24"x 6' Whitcomb.
17"x20"x 4' Whitcomb.
17"x17"x 4' Whitcomb.
20" Smith & Mills shaper s. p. d.

POWER PRESSES.

No. 1 Sidney inclinable.
No. 2-A Standard s. a.
No. 4 Manville s. a. p. p.
No. 2-B Standard double action.
No. 1 Bliss d. a. cam.
No. SN-203 Ferracute, 50,000 lbs.

SCREW MACHINES.

No. 6 Brown & Sharpe, g. f. h., 2".
No. 2 Bardons & Oliver, g. f. h., 1".
3"x36" J. & L. flat turret.
No. 00 Brown & Sharpe automatic.
No. 0-G Brown & Sharpe automatic.
No. 0 B. & S. plain head, wire feed.

MISCELLANEOUS.

Band saw, 12" H. & R. metal cutting.
Broaching mche. No. 1 Lapointe.
Hammer, 125 lbs. Dupont.
Radial drill, 3' Prentice.
Radial drill, 5' Prentice.
Slotter, 12" Bement-Miles.

FOR SALE BY

Duff Machinery Corporation, - 47 So. George St., York, Pa.

No. 4 Foote-Burt four-spindle drill, weight 10,000 pounds, for step cone, power feed, good condition, capacity in steel two inches, No. 5 Morse taper, price $500 before removal to warehouse.
16" Besly disc grinder, 24" capacity, nearly new.

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City

Boring mill 96" Betts, m. d.
Boring machine, 4" Betts, knee type.
Boring mch., 2½" Fitch., knee type.
Brake, 8' Robinson, 16 gauge..$200.
Lathe, 26/48"x18' McCabe, dbl. sp.
Lathe, 26/48"x14' McCabe, dbl sp.
Lathe, 24"x12' S. & B.....$500.
Lathe, 24/33"x14' Pond..... 450.
Lathe, 26"x14' Rahn-Carpenter.
Lathe, 20"x15' Reed, 11' centers.
Lathe, 18"x10' Flather, q. c.
Lathes, 18" and 20"x8' Whitcomb-B., q. c. g., 3 cone, dbl. back grd.
Lathes, 16"x8' Davis.....$250.
Miller, vert 42"x14" No. 5B Becker.
Miller, No. 3 Kempsmith plain.
Multi drill, 6 sp. Baush in circle.
Pipe mch., 8" Saund., m.d.4 yrs. old.
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe machine, 4" E. C. & B., belt.
Pipe mche., 4" Curtis & Curtis m.d.
Planer, 30 "x30"x10' Cincinnati, 2hds.
Radial drill, 3½' Mueller, g. b. tap.
Radial drill, sens., 3' American, tap.
Shaper, 24" G. & E., high duty, mtr.

FOR SALE BY

Miles Machinery Co., - - Saginaw, W. S., Mich.

Automatic, 3½" Cleveland "A".
Automatics, Nos. 22 & 24 New Brit.
Bulldozer, No. 4 Williams & White.
Compressor, 741cu. ft.Chicago o.c.b.
Drill pr., 32" Superior b.g., p.f., s.h.
Drill radial, 4', 5', 6' & 8' Western.
Drills multiple, No. 30 Natco 12-sp.
Gear hobbers, Nos.3 & 12 Barber-C.
Grinders, 6x18, 10x36, 12x36 Landis.
Grinders, surf., Nos.1 & 2 Diamond.
Keyseaters, Nos. 0, 4 & 6 M. & M.
Lathes, 14x8 and 16x6 Hendey.
Lathe, 36"x16' Johnson triple grd.
Lathes, turret 2A & 3A W. & S.
Lathes, turret, 21" & 24" Gisholt.
Mills, boring, 53" Niles-Bement-P.
Mills, horiz., 3" & 2½" bar universal.
Millers, plain, 2BS & 2B Milwaukee.
Millers, univ., 1½, 2 & 3 B. & S.
Millers, vertical, No. 4 Cincinnati.
Presses, Nos. 65 & 66 Consolidated.
Planer, 36"x36"x10' Cincinnati.
Saw, cold, 6" cap. Espen Lucas.
Shear, ¼" Kling plate splitting.
Threaders, 2", 2½" and 3" Acme.
Upsetters, 1", 1½", 1½", 2" & 3" Ajax.

FOR SALE BY

B. L. Saltzman, - - 524 W. Van Buren St., Chicago, Ill.

MILLING MACHINES.

Becker No. 25.
No. 5 LeBlond.
Hand milling machines.
No. 5 Cincinnati.

GRINDERS.

No. 60 Heald cylinder grinder.
Taylor & Fenn.
Bench and floor type grinder.

LATHES.

16x10 Lodge & Shipley.
24x10 Boye & Emmes.
16x7 Chard.
15x6 Van Dyke.

PUNCH PRESSES.

Rockford No. 1.
Bliss No. 19.
No. 2½ Bliss Stiles.
R. & K. No. 2-2" stroke.

TINNERS TOOLS.

Roller, 10", 12" top roll, 10" bottom roll
Shear, 10"—18 gauge power square.
Punch and shears.

Note: We carry a full line of new and used Electric Motors, Pulleys, Belting and Hangers.

USED AND REBUILT MACHINERY

FOR SALE BY

Allegheny Gear Co., - - 1013 Empire Bldg., Pittsburgh, Pa.

Broaching mche., No. 2 LaPointe.
Drill, 2-D Colburn, 24" swing 28".
Drill, radial, 5' Reed-Prentice.
Gear cutter, No. 3A Cincinnati.
Gear cutter, No. 13 Brown & Sharpe.
Gear shapers, "Fellows" 62, 612.
Gear generators bevel, 11", 15"
Grinder, No. 20 Bryant chucking.
Grinder, Landis 12"x68" plain whls.
Hoists, portable, crane, 2-ton.
Lathe, 32"x14' Bridgeford, g. h., t. a.
Miller No. 4 B. & S. universal.
Planer, Bickett 36"x12', m.d. & 15 mtr.

FOR SALE BY

Keystone Sales Co., - 902 Engineers Bldg., Cleveland, Ohio

Auto. chuck, Foster No. 5.
Boring mill, Bullard 42", New Era.
Broach, LaPointe No. 2 double.
Drill, Allen 4-spindle.
Drill, Foote-Burt No 25.
Drill, Henry & Wright C-1 K, 2 sp.
Drill, Moline 13D, 12 spindles.
Drills, Colburn Nos. No. 2 and 4.
Drill, Bausch No. 4, 30" round hd., 12 spindles.
Grinder, Brown & Sharpe No. 1 univ.
Hack saw, Acme 9x9.
Lathe, Hendey 16x7, taper.
Lathe, Hendey 14x6, compound.
Lathe, Bradford 16x8, compd. q. c.
Miller, Cin. No. 4, univ., cone type.
Milling machine, LeBlond No. 2 universal complete.
Press, Bliss No. 15, flyweel.
Press Consolidated No. 65, geared.
Quenching machine, Gleason 18".
Shaper, G. & E. 20"
Threader, Landis 1½", lead screw.
Turret lathe, Warner & S. No. 4.
Turret lathe, P. & W. 16x6, taper.
Welder, butt, Federal No. 10.

FOR SALE BY

Sun Machinery Co., Inc., 39 Hamilton St., Newark, N. J.

BORING MILLS.

36" Bullard v. t. l., with cutting lubricant system.
42" Bullard, s. p. d.
54" Bullard rapid production.
53" Niles-Bement-Pond.
60" Bullard.
72" Gisholt.
110" Betts.
16' Niles.
16'—36' Niles.
8" Bullard mult-au-matics.
5" Beaman & Smith horizontal.

RADIAL AND UPRIGHT DRILLS.

5' Baush, s. p. d.
6' Cincinnati-Bickford universal.
No. 30 Natco, 48 spindles.
42" Cincinnati-Bickford, m. d.

MILLING MACHINES.

No. 4 Cincinnati high-power, s.p.d.
No. 3 Brown & Sharpe universal.
No. 2 Cleveland universal, s. p. d.
42"x36"x12' Ingersoll, 4 heads.

LATHES.

72"x40' Sellers, triple geared.
60"x40' Fifield, triple geared.
36"x42' Johnson triple geared.
30"x20' Fitchburg.
30"x18' H. S. G., q. c. g.
24"x12' Lodge & Shipley, q. c. g.
18"x 8' Lodge & Shipley, q. c. g.
18"x 8' Monarch, q. c. g.

PLANERS AND SHAPERS.

10'x 7'x25' D. & H. openside.
10'x10'x36' Betts.
72"x72"x30' Sellers.
48"x48"x16' D. & H. openside.
36"x36"x10' W. & P.
24"x24"x 6' Gray.
20" Gould & Eberhardt shaper.
24" Hamilton shaper.
15" Smith & Mills shaper.
16" Gould & Eberhardt shaper.

MISCELLANEOUS.

Bending rolls, pyramid, 10'.
Gear cutters, 36"-48" Brown & S.
Grinder, No. 2 Brown & S. surface.
Grinder, No. 60 Heald cylinder.
Grinder, 14" P. & W., vert. surface.
Presses, various types and sizes.
Punch, No. 2 Hilles & J. dbl. end.
Punch, 72" H. & J., brand new.
Rotary shear, 44" Lennox.
Rotary shr., No 6 Quick., brand new.
Screw machines, automatic.
Turret lathes.

Partial list only; own or have selling rights for over 500 machines of every description. Mail us your requirements.

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

Band saw, 24" woodworking.
Drill, multiple - spindle Bausch, No. 3 Morse taper.
Hammer, 800 lb. Billings & Spencer.
Miller, No. 00 Brown & S., hand.
Press, No. 3 Stiles.
Press, No. 6 Niagara.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Shear 12'x14 ga., Loy & Nawrath.
Shear, 50"x¼" Bertsch, 15" throat.
Shear, alligator, Canton, cap. 1¼" sq.
Shear, 36"x18" gap, foot.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

J. P. Rentschler & Co., 605 W. Washington Blvd., Chicago, Ill.

Milling machine, No. 6 Pratt & Whitney hand miller (2).
Milling machine, No. 3 Becker vertical with rotary table.
Presses, all sizes of open back inclinables.
Presses, No. S-51 and SRG-102 Ferracute, double crank.
Press, No. 137-B Stoll double crank single geared, wgt. 13,500 lbs.
Presses, No 39 and No. 24 Michigan horn.
Press, No. 4½ R. & K. arch type, stroke 2½", wgt. 5300 lbs.
Many other presses and machine tools at lowest prices.

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Boring mill, Cleveland No. 1 hor. with 24" circular table. List $3300., our price $2200.
Pipe machine, No. 70 Forbes.
Shaper, 20" Whip, back geared.
Straightener, No. 2½ Corey.

Exceptional values in USED TOOLS:

Drill, 6' American univ. radial.
Drill press, 4-spdl. National sensitive.
Drill, Avey No. 2, 3-spindle, 15" overhang, motor drive. with pump and piping.
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel Co. snag grinder.
Grinder, Blount 1½x14 wet tool, m. d.
Lathe, 24"x16' Lodge & Shipley, compound rest, quick chg. gears.
Lathe, 20"x12' Reed.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Miller, Oesterlein universal.
Millers, Wisconsin hand, (3).
Planer, 30"x30"x16' L. W. Pond.
Planer, 60"x60"x22' Niles.
Radial, 5' Pond.
Shaper and slotter, No. 1 Rhodes.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steinle.

A CHAIN

The advertisers in the Blue Book pay Hitchcock. He sends you the Blue Book free. You buy the articles advertised. The chain is complete.

BUT—

—suppose the advertisers do not know that you saw it in the Blue Book—where does Hitchcock come in? When writing to advertisers, won't you kindly give Hitchcock credit?

Two Machines Used So Little They Are Almost New

No. 3 Barber-Colman Gear Hobber, with vertical feed for worm wheels Serial 488, with change gears and one hobber.

7/8" Cleveland Model A Automatic Screw Machine, double cross slides Serial 31820.

OTHER MACHINES

PRESSES

No. 165 Consol. dbl. crk. 2½" str. Flywheel type (Three in stock).
No. 540 Max Ams straight side, geared, 8" stroke.
No. 56 Toledo Trimming, grd., 8" str., with side shear.
No. 56 Niagara Trimming, geared, 4" stroke with side shear.
No. 126 Max Ams incl., 2" stroke.
No. 151-D Ferracute, dbl. geared twin dr. 13" str. 150 ton cap.
No. D-201 Ferracute, dbl. geared, twin dr. 10" str. 200 ton cap.
No. D-201 Ferracute, dbl. grd., twin dr. 2 shafts, 8 & 24" 200 ton cap.
No. 3 Stiles solid bk., 1½" str. (2).

All above presses are belt drive.

SCREW MACHINES

No. 00 B.&S. auto. ser. 5802-5803.
No. 0 B. & S. auto. slott. attach.
⅜-½" Cleveland Model A. (5).
⅜-½" Cleveland Model B, (2).
2¼" Gridley multiple, serial 9186.
No. 0 B. & S. hand, ⅜" cap.
No. 1 B. & S. hand, ⅝" cap.
⅝" P. & W. hand, 19 collets.
⅝" Garvin hand, (3).
No. 4 Milholland, 1⅝" cap. (6).

GRINDERS

14"x72" Norton, plain.
16"x96" Landis, plain.
16"x48" Landis crk. pin, self-cont.
29"x96" Landis crank shaft.

DRILLS

36" Cincinnati Bickford, g. b. d. tapping attach. swing. box tbl.
36" Cincinnati, back geared sliding head tapping attach.
28" W. F. & J. Barnes, b. g. a. h.
28" Hamilton, back grd., slid. hd.
Several 20" Drills, Barnes, Rockford, Milwaukee.

SHEARS

146" Streine, 10 ga. NEW.
No. 2 Doelger & K. alligator (2).
No. 18 Carlins alligat. (2) 2¼" cap.
No. 5 United alligator, 3¾" cap.
No. 2 Carlins, alligator 5" cap.
Niagara ring and circle, 14 ga.
10" Rock River punch, with shear blades.
36" Peerless steel, foot 18 ga. capacity.

MILLING MACHINES

Nos. 3, 5 & 6 Becker vert., rebuilt.
No. 3 Cin. Hi Power vertical.
No. 3 Kempsmith plain ex. cond.
No. 2 Cin. Univ. all fds div. hd. etc.
No. 3 LeBlond plain vert. attach.
No. 25 Becker plain, (3).
No. 1 Rockford pl., 10" div. hd.
No. 0 Brown & Sharpe plain, (2).

17 Lathes, 10 Turret Lathes, 4 Planers, Keyseaters, Slotters, and many other machines of all kinds. Send us your inquiries.

A. D. White Machinery Co.

108-114 N. Jefferson St., Chicago, Ill.

A Few Real Bargains Offered From Our Stock

Rebuilt and Guaranteed—Equal to New

2—10"x5' Pratt & Whitney tool room lathes, complete.
1—16"x6' Monarch geared head lathe.
1—14"x6' Lodge & Shipley lathe.
1—20" Stockbridge shaper.
1—20" Cincinnati shaper.
1—18"x6' South Bend gap lathe (new machine).
1—18H Gould & Eberhardt gear hobber, latest type.
1—No. 2 Rockford plain miller, cone drive.
2—24" Cincinnati sliding head drill press—1 with tapping attach.
1—No. 4B Becker vertical miller.

Used Machine Tools—In Excellent Condition

3—32"x12' Pittsbugh heavy duty lathes, cone drive.
1—44"x45' Putnam triple geared lathe.
1—No. 2 Webster & Perks 10x30 universal grinder.
1—No, 2 Taft Pierce universal grinder.
1—6"x15" Fitchburg plain grinder.
1—26"x26"x8' Pease planer—1 head.
1—6' Niles radial drill, cone drive (good condition).
1—12" William Sellers slotter cone drive.
1—7"x6" Ingersoll-Rand air compressor.
1—48"x48"x16' Detrick & Harvey open side planer.
1- 48"x48"x30' Gray planer, 4 heads.
1—48"x48"x16' Pond planer, 4 heads.
1—42"x42"x16' Hamilton planer, 4 heads.

The Empire Machinery Exchange Co., Inc.
2128-30 St. Clair Ave., Cleveland, Ohio

Kinsey's Money Savers

Special Bargains
—IN—
Used Machine Tools

Over five hundred items of good used machinery:

Lathes
Milling Machines
Grinding and Buffing Machines
Drilling Machines
Gear Cutting and Hobbing Machines
Turret Lathes and Screw Machines
Pipe and Bolt Machines
Gas Furnaces
Power Presses, Punching, Shearing and Bending Machines.
Metal Planers
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Write for complete printed list just off the press giving full details and net prices.

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BRANCHES: INDIANAPOLIS, IND., LOUISVILLE, KY., HAMILTON, OHIO, DAYTON, OHIO, COLUMBUS, OHIO

A Few Listings From a Stock of

1500 "Restored" Machines

24" Bullard New Era.
No. 0 Giddings Lewis Horizontal.
No. 21 Lucas Horizontal.
8" Bar Barrett Horizontal.
2—72" N-B-P Vert. Rapid Traverse.

75—4 spindle Gridley ¾", 1¼", 1¾".
3—4 spindle Cone 1¼".
8—Brown-Sharpe 0, 00, 2.

10—Norton 6x32 to 18x96.
16x52 Landis.
30x84 Diamond Face.
No. 14 P. & W. Vertical.
No. 2 Norton Universal.
No. 13 B. & S. Universal.
5—No. 65 Heald.

3' American Triple Purpose.
4' Dreses Plain Radial.
4' American Plain Radial.
5' Cincinnati-Bickford.
6' American Triple Purpose.
2—7' Western Plain Radial
3—4-spindle Leland-Gifford BB.
2—No. 14 Natco Multiple.
Nos. 2, 3, 4 Baush Multiple.
3—20" Barnes All Geared.
72" Detrick-Harvey Openside.
36" Detrick-Harvey Openside.
48x48x10 Cincinnati, 4-heads, M. D.
48x48x14 N-B-P 3-heads, R. M. D.
48x48x14 Betts, 4-heads, R. M. D.
48x36x20 Cincinnati, 4-heads, M. D.
2—36x36x12 N-B-P 4-hds., R.M.D.
6—30x30x12 N-B-P 2-hds., R.M.D.
6—24x24x10 Whitcomb-B, 2-heads, Belt Driven.

28" Queen City Shaper, Cone.
24" G. & E. Shaper, Cone.

P. & J. Universal Table.
" American Cone.
20" Walcott Cone.
15" P. & J. Universal Table.
16" G. & E. Motor drive.

3-A Warner-Swasey Screw Machine.
2-A Warner-Swasey Screw Machine.
26" Libby Turret Lathe.
6—18" Libby Turret Lathes.
No. 4 Warner-Swasey Universal.
10—No. 4 Warner-Swasey Turrets.
No. 6 Warner-Swasey Turret.

2—No. 5 Cincinnati Plain, G.H., R.T.
3—No. 4 Cincinnati Plain, G.H., R.T.
2—No. 3-B Milwaukee Plain.
1—No. 3-B Milwaukee Universal.
1—No. 2-B Milwaukee Plain.
1—No. 4-B Milwaukee Vertical.
1—No. 2½-B Milwaukee Vertical.
2—No. 2 Cincinnati G. Head Plain.
1—No. 3 Cincinnati Plain Cone.
1—No. 4 Cincinnati Vert. Latest.
1—No. 4 Cincinnati Vert. G. Head.
1—No. 3 Cincinnati Vert. G. Head.
1—No. 2 Cincinnati Vert. G. Head.
No. 4 B. & S. Universal Cone.
No. 8 Lees-Bradner Thread.
4—No. 5-A Lees-Bradner Thread.
12" P. & W. Automatics.
10—5" P. & W. Automatics.

2—No. 12 Barber-Colman Hobbers.
72" B. & S. Gear Cutter.
60" B. & S. Gear Cutter.
36" Cincinnati Gear Cutter.
2—90" P. & W. Gear Cutters.
36" Gleason Gear Planer.
24" Gleason Gear Planer.
12—18" Gleason Generators.

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Simmons Machine Tool Corp.

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Electric Motors

At Prices that Will Move Them

We are liquidating a $10,000 stock of high grade, reliable make, electric motors, all late type, General Electric, Westinghouse, Crocker-Wheeler, Wagner, and Century, fully guaranteed against any electrical defects. Put some in stock for your future motor needs!

3 Phase, 60 Cycle, 220 or 440 Volts, A. C. Current.

1 HP.	1750 RPM.	$ 25.00	3 HP.	900 RPM.	$ 52.50
1 HP.	1200 RPM.	28.00	3 HP.	600 RPM.	65.00
2 HP.	1800 RPM.	33.00	5 HP.	1800 RPM.	52.50
2 HP.	1200 RPM.	35.00	5 HP.	1200 RPM.	65.00
3 HP.	1800 RPM.	40.00	5 HP.	900 RPM.	75.00

The Following are with Compensators:

7½HP.	1800 RPM.	$100.00	25 HP.	1200 RPM.	$170.00
7½HP.	1200 RPM.	115.00	25 HP.	900 RPM.	185.00
7½HP.	900 RPM.	130.00	30 HP.	1800 RPM.	160.00
10 HP.	1800 RPM.	120.00	30 HP.	1200 RPM.	200.00
10 HP.	1200 RPM.	135.00	40 HP.	1200 RPM.	225.00
15 HP.	1800 RPM.	130.00	50 HP.	Slip Ring 690 RPM.	400.00
15 HP.	1200 RPM.	145 00			
20 HP.	1200 RPM.	155.00	75 HP.	600 RPM.	300.00

1 Phase, 60 Cycle, 110 or 220 Volts, A. C. Current.

¼ HP.	1750 RPM.	$ 8.00	2 HP.	1800 RPM.	$50.00
½ HP.	1750 RPM.	25.00	2 HP.	1200 RPM.	65.00
1 HP.	1750 RPM.	32.50	3 HP.	1800 RPM.	70.00

5 HP. 1800 RPM. $90.00

Electric Drills up to 1". Electric Grinders, bench type. Variable speed Motors, direct current Motors, controller equipment. Motor driven Blowers and Exhaust Fans.

Act on this IMMEDIATELY while the best sizes are available.

3 Tons of rebuilt Leather Belting from ½" to 10". Send for prices today!

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Exceptional Values

RADIALS AND UPRIGHT DRILLS

6' Dreses High Duty Pl. Radial, g. b. d.
5' American Tr. Purp. Plain, g. b. d.
5' Reed-Prentice Plain, arr. m. d.
5', 3½' and 3' American Triple Geared Plain Radials, gear box drive.
3½' Mueller Plain Radial, g. b. d.
3' Reed-Prentice Plain Radial, g. b. d.
2½' Fosdick Plain Radial, cone pulley.
4' Hammond b. b. Sens. Radial, t. a.
3' American b. b. Sens. Radial, t. a.
Nos 1 & 3 W.F. & J. Barnes Hor. Rad.
36" Cinti.-Bick. Up. Drill, g. b. d., t. a.
30" & 28" Snyder Upright Drill.
28" & 26" W. F. & J. Barnes Up., latest.
28" Aurora Upright Drill, tapping att.
26" W. F. & J. Barnes Up., latest type.
25" Snyder Upright Drill.
25" Kokomo High Speed Upright Drill.
24" Aurora Upright Drill.
24" Cincinnati-Bickford Upright Drill.
22" W. F. & J. Barnes Upright, t. a.
21" Cinti.-Bickford Upright Drill.
21" Kokomo High Speed Up. Drill.
20" Barnes All-Grd. Drill and Tapper, self oiling type.
5-spindle Detroit Horizontal Drill.
Nos. 314 & 310 Baker Bro. Hvy. Duty.
D-No. 2 Colburn Heavy Duty Drill.
Henry & W. Class "B" b. b. Drill.
No. ½ Avey b. b. Drill, Pedestal Type.
No. 30 Natco Multiple Drill, 32-spdls.
No. 41 Natco Multiple Drill, 8-spdls.
Nos. 0 & 1 Fox Multiple, 6-spindles.
No. 13 Pratt & Whitney Mult., 8-spdls.

ENGINE AND TURRET LATHES

48"x24' Houston-Stanwood & Gamble Hvy. Duty, q. c., Grd. Hd. Lathe, m. d.
42"x18' Amer. G. H., q.c., m. d., late.
36"x28' Amer. G. H., q. c., m. d., late.
27"x14' LeBlond q. c. Lathe, late type.
26"x14' Gleason standard change Lathe.
25"x12' LeBlond q. c. Lathe.
24"x10' G. & K. Hvy. Duty, q.c., late.
22"x12' Whitcomb-Blaisdell semi-q. chg.
21"x10' LeBlond q. c. Lathe.
20"x10' American q. c., latest type.
19"x10' LeBlond q. c. Lathe.
18"x12' Morris q. c., with taper att.
18"x12' Cisco, q. c., Lathe.
18"x10' Amer. Grd. Head, q. c. Lathe.
18"x10' Walcott q. c. Lathe.
18"x 8' Amer. Tool Wks. q.c. late type.
18"x 8' Mueller, q.c. Lathe, 95% new.
16"x 8' Lodge & Shipley, q.c., late type.
16"x 6' Monarch quick change Lathe.
14"x 6' L. & S. sel grd, hd., q.c., late type.
14"x 6' Lodge & S. q. c., taper att.
12"x 6' Seneca Falls g. b., q. c., t. a.
Nos. 2A & 3A Warner & Swasey, Univ. hol. hex. Turret Lathes.
No. 1B Foster Univ. hollow hex. Turret.
21" & 24" Gisholt Tur. Lathes, late type.
18" Libby Turret Type "A", 3½" hole in spindle.
3"x36" J. & L. dbl. spdl. Turret Lathe, late type, 20,000's serial.
3¼"x40" Greenlee Flat Tur., bar equip.
Nos. 2, 4, 6 Warner & S. Turret Lathes.
No. 4 B. & S. Wire feed Screw Mche.
Nos. 2 & 4 Bardons & O. Turret Lathes.
No. 4 Millholland Turret, motor drive, all geared head.
No. 2 S. P. Garvin Hand Screw Mche.

MILLING MACHINES

No. 4 LeBlond Univ., cone pu complete
Nos. 3 and 2 B. & S. Univ., c. p., comp.
No. 1½ Cinti. Univ., cone p., complete.
No. 1½ LeBlond Univ., c. p., complete.
No. 1½ Valley City Univ., c. p., complete.
No. 1 Owens Univ., cone pul. complete.
No. 5 LeBlond Plain, m. d., all geared.
No. 4 Cin. High Power Pl., c. p. late.
No. 3 B. & S. Plain, c. p., p. r. t., late.
No. 3 Hvy. Ohio Plain, c. p., p. r. t.
No. 3 Hvy. LeBlond Plain, cone pulley.
No. 3 Kempsmith Plain, cone pulley.
No. 3 Hendey-Norton Plain, cone pul.
No. 2½ LeBlond Plain, c. p., late type.
No. 2 Cincinnati Plain, cone pulley.
No. 1½ Cincinnati Plain cone pulley.
No. 1 Kempsmith Plain, cone pulley.
Nos. 3 & 5C Becker Vertical Millers.
No. 2 Brown & Sharpe Vertical Millers.
24" Cinti. Auto. Duplex, latest type.
28" Cincinnati Semi-Auto. Duplex.
No. 7H Becker, Lincoln type, Mfg.
Gooley & Edlund, Briggs type, Mfg.
No. 6 Whitney Hand Miller.
Nos. 0 & 2 Bristol b. b. Hand Miller.
No. 2 Knight Milling and Drilling Mche.

EASTERN MACHINERY CO

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

SHAPERS AND PLANERS

32" Cinti. hvy. duty b. g. Crank, m. d.
24" Queen City heavy duty b. g. Crank.
24" American Tool Works heavy duty b. g. Crank.
24" Walcott h. d., b. g. Crk., helical grd.
20" Cincinnati heavy duty b. g. Crank.
20" Kelly heavy duty, b. g., Crank
16" G. & E. high duty b. g. Crank.
16" Cincinnati heavy duty, b. g., Crank.
16" Smith & Mills h. d., b. g., Crank.
16" Steptoe heavy duty, b. g., Crank.
15" Potter & Johnston Universal Crank.
14" Steptoe Plain Crank.
36"x36"x12' D. & H. Opens. 2-heads.
36"x36"x14' American Planers, 2-hds.
38"x38"x18' Niles Planer, 2 heads.

GEAR MACHINERY AND GRINDERS

No. 12 Barber-Colman Gear Hobbers.
No. 18-H Gould & E. Gear Hobber.
No. 5-A Lees-B. Gear Hob. 14 & 19".
No. 6 Fellows Gear Shapers.
20" Ingle Gear Tooth Rounding Mche.
No. 4-48" B & S. Auto. Spur Gear Cut.
No. 3-26" B. & S. Auto Spur Gear Cut.
84" Diamond Face Grinder, arr. for m.d.
No. 2 B. & S. Surface, with mag chuck
No. 2 W. & M. Auto Surface, mag. ck.
No. 2 W. & M. hd. fd., Surf., mag. chk.
8" &12" Aiter Rotary Surf., mag. chuck.
Walker Single Stroke Vertical Surface Grinder, 10" dia. magnetic chuck.
8" Heald Rot. Surf., mag. chk., No. 200.
Nos. 70 & 75 Heald Internal Grinders.
No. 60 Heald Cyl., late type, complete.
Capital Internal, collett attachment.
No. 120 Gardner Double Disc.
No. 120 Gardner Combination Disc.
No. 4—23" & No. 6—26" Gardner Disc
No. 12—26" Besly Disc Grinder.
No. 14 Gardner Double Disc.
Nos. 1 & 3 Brown & Sharpe Universal.
6"x32" and 18"x96" Norton Plain.
No. 2—12"x36" Cincinnati Plain.
8"x30" Modern Pl., self-cont., 95% new.
No. 2 Norton Univ. Tool & Cutter.
No. 2 Oakley Univ. Tool & Cutter.
No. 1 LeBlond Univ. Tool & Cutter.

MISCELLANEOUS

Nos. 3½ & 4 Greenerd Arbor Presses.
No. 4 Atlas Arbor Press.
No. 55 Atlas Power Arbor Press.
No. 29 Atlas Arbor Press.
15-Ton Herc. Pwr. Arbor Press, b. d.
15-Ton Lucas Pwr. Forc. Press, b. d.
No. 52 Nat. Acme 4-spdl. Automatic.
No. 33 New Britain Auto. Chk. Mche.
Nos. 2 & 3 LaPointe Broach Machine.
Nos. 2 & 3 LaP. Dble. Broach Mche.
1" Acme Class "A" Bolt Cutters.
1" & 1½" Landis dbl.-spdl. Bolt Thread.
1" Landis Bolt Thread., lead screw.
1" Landis Bolt Threading Machine.
24" Bullard rapid prod. Vert. Boring Mill, turret and side head.
30" King Vert. Boring Mill, turret head, power rapid traverse, m. d.
42" Bausch Vert. Boring Mill, 2-heads.
51" Niles Vert. Boring Mill, 2-heads.
51" Bullard Vert. Boring Mill, 2-heads.
Nos. 2 & 3 P. & W. Die Sinkers.
No. 91B Toledo dbl. crank grd. Press.
No. 5 L. & J. o. b. i. Power Press.
C-No. 3 Ferracute o. b. i. Power Press
DD-No. 2 Ferracute o.b.i. Power Press.
No. 3 Bliss, Stiles pattern, Power Press.
D. A. No. 14 Stoll o. b. i. Press.
6' Toledo Pwr. Sq. Sh., cap. to 14 ga.
Nos. 1 & 2 Davis Keyseaters.
No. 00 Baker Keyseater, cap. ¾" kywys.
Nos. 4 & 5 M. & M. Keyseaters.
Nos. 2A & 3A High Speed Riv. Ham.
40 & 60 lb. Bradley Helve Hammers.
No. 12 P. & W. 2-spindle Profilers.
No. 1 P. & W. 2-spdl. Gun Bar. Drill.
4½"x12" & 6"x14" P. & W. Thr. Mill.
Nos. 1, 2 2X & 2B Garvin Auto. Tap.
18"x12"x12" Worthington dbl. steam dr. Air Comp, cap. 700 cu. ft.
Winfield Elec. Spot Welder, cap. to weld 2 pieces of ¼" material.
12"x12" Racine High Speed Pwr. Hack Saw, with 3 speed gear box.
6"x6" Racine High Speed Power Hack Saw.

And Many Others. Send Us Your Inquiries.

98 E. Pearl St., CINCINNATI, O.

What have you to Sell?

S. C. & H.

Back of every Rebuilt Tool we sell. Our stock

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18"x 8' Prentice, compound rest, l. c. g., chuck.
18"x 8' Porter, 4-step cone, s. b. g., q. c. g., engine lathe, complete, new.
18"x 8' Superior, c. r., q. c. g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
20"x 8' Reed friction head, with turret on carriage.
20"x10' Boye & Emmes, c. r., q. c. g.
24"x10' Greaves & K., c. r., q. c. g.
20"x10' S. & B. c.r., loose change gear

TURRET LATHES AND SCREW MACHINES

No. 00 Brown & Sharpe auto.
No. 0 Brown & Sharpe auto., (2).
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.
No. 55 Nat'l Acme 4-spdl. auto.
2½" Cleveland model "A" auto. screw mch., with 8-hole turret.
1¼" Cleveland model "A" auto. screw mch., with 8-hole turret.
No. 2-G Brown & Sharpe automatics (2).
No. 2 Brown & Sharpe turret forming (2).
1"x7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
3' American sensitive radial with t. a. and elevating table.
4' Mueller, gear box, sgl. pulley dr.
5' and 6' Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
21" Aurora W. & L., square base, stationary head.
6' Western, with speed box, tap. att.
5' American triple purpose, with speed box.
No. 14 Colburn heavy duty.
No. 25 Foote-Burt heavy duty, (2).
12-spindle Moline, cam fd., two tbl.
No. 1, 7" overhang, single spindle, Allen, h. s., b. b. (3).
No. 14 Natco.
Fox multiple spindle, sliding head, arranged for 12 spindles (4).
3-sp. Edlund, high sp., ball bearing.
No. 22 Colburn, sgl. sp., hvy. duty, 1½" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
No. 44 Colburn, sgl. sp. heavy duty, 2½" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 2½" cap. with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.,

GUARANTEE

is large and varied, and constantly changing

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
No. 1 Brown & Sharpe vertical.
No. 2 Cincinnati vertical, s. p. d.
No. 3 Cincinnati. plain, s. p. d. (2).
No. 4-A B. & S. univ., m.d., vert att.
No. 1½ B. & S. cone drive, univ.
24"x18"x60" Ingersoll, Farwell vertical milling head.
No. 1-V Brown & Sharpe plain.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing, (2).

METAL CUTTING TOOLS AND SQUARING SHEARS

No. 3 Atkins band saw, belt driven, new, (2).

GEAR CUTTERS AND HOBBERS

26" No. 3 Brown & Sharpe automatic.

SHAPERS AND PLANERS

16" American, b. g. c., complete.
16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control.
20" Kelly b. g. crank.
20" Hendey friction, (2).
16" Smith & Mills, back grd. crank.
22"x22"x 5' Putnam planers, (2).
30"x30"x10' Woodward & Powell, three heads.
72"x72"x26' Fitchburg, four heads.

CENTERING MACHINES

Centering machines, single spindle Cadillac.

GRINDERS

No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 2 Cincinnati univ., latest type.
No. 13 B. & S. univ. and tool.
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14—30" B. & S. plain cyl., (2).
No. 14—48" B. & S. plain, (2).
6"x30" Norton plain, (2).
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 1 Woods cutter and reamer grinder, complete, new.
No. 2 Woods cutter and reamer grinder, complete, new.
No. 2½ Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

Bolt cutter, 1" National 2-spindle, with Landis heads.
Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
Boring mill, 36" Gishoit vertical swivel head, chuck jaws.
Broach, No. 2 double Lapointe.
Filing machine, No. 2 Cochrane-Bly.
Marking machine, Etchograph.
Pipe machine, 8" Jarecki, No. 88.
Pipe machine, 4" Oster.
Profiler, No. 12, 2-spdl. P. & W. vert.
Scleroscopes, Shore, (4).

Cleveland, Ohio; Detroit, Michigan

Bath's Guaranteed

Bolt Cutters

1½" Acme staybolt cutter.
1½" Landis, sgl. head, with dies.
1¼" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
51" Niles-Bement-Pond.
84" Ridgway 2 heads, gear feed, excellent.

Boring Mills—Horizontal

3½" bar Rochester, floor type.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

Allen single spindle ball bearing.
4-spdl. Moline rail drill, 1½" cap.
No. 1, 8' wall radial.
30" Aurora, sliding head.
24" No. 25 Foote-Burt, with compound table
Several 20" and small sens. drills.
3-spindle Barnes drill press.
No. 41 Natco, round index table, 8-spindle.
No. 13 Natco, multi-spindle.

Forging Machines

6" Ajax, steel bed.
4" Ajax, steel bed.
2" Ajax, cast iron bed.
¾" and 1½" Acme, steel bed.
250-ton Mesta steam hydraulic.

Grinders

84" Diamond face grinder.
18x96" Norton plain.
No. 20 Safety electric floor grinder, 10 HP motor, 32"x4" wheels.
Various electric floor grinders and grinding stands.
26" horizontal disc grinder.
No. 1 Besly disc grinder, 12".

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.
No. 2 Baker, capacity 2"x20½".
No. 5 Mitts & Merrill, 3½" capacity.

Lathes

12"x5' Carroll-Jamieson.
16"x8' LeBlond, friction head.
16" to 18"x6'-8' beds, tool room.
26"x14' Greaves-Klusman lathe.
30"x14' Boye & Emmes, double back geared.
36"x14' Schumacher & Boye, triple geared.
42"—60"x34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.
60"x20' American, triple geared.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.
15-ton Hydraulic Mfg. Co. Press.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 1 Rockford plain, back geared, 22"x6½"x15'.
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 4 Cincinnati high power miller, table 64½"x16½".
Becker miller, model "C", table 14"x54".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

30"x30"x8' Gray, single head.
36"x36"x14' Gray planer, 2 heads.
60"x60"x20' Cincinnati, 3 heads, very good.
48"x48"x14' Hamilton, 4 heads.
12" Springfield, crank shaper.
24" Rockford and Queen City shapers.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.
76" Multiple punch, shear or press, ⅝" capacity.

Turret Lathes and Screw Machines

No. 1-B Foster universal.
3"x36" Jones & Lamson.
No. 4 Bardons & Oliver.
1" Garvin screw machine.

MISCELLANEOUS

Acetylene Generator.
Blower, No. 4 Root, motor drive.
Blowers, Nos. 1 & 2 Buffalo Forge.
Chain Hoists, ½, 1, 1½, 4 & 6 ton.
Gear Hobber, 5-A Lees-Bradner.
Hammer, 100 lb. Bradley helve.
Pipe Machines, 8" Merrill.
Slotter, 48" Niles-Bement-Pond, motor drive.

Machinery Av., N. E., Cleveland, O.

Machines of Quality

Machines of This Type are Hard to Find

42" Bullard Vertical Turret Lathe New Era.

61" Bullard Maxi-Mill.

8" Cincinnati Boring Mill.

72" Newark Spur Gear Cutter.

60" Brown & Sharpe Gear Cutter.

42"x32' AMERICAN GEARED HEAD LATHE.

No. 16 BLANCHARD MOTOR IN HEAD.

No. 2-B MILWAUKEE UNIV. MILLER.

24" GOULD & EBERHARDT SHAPERS, Motor Drive, 5 H. P. 220 Volts—3 Phase 60 Cycle.

THE MOTCH & MERRYWEATHER MACHINERY CO.

CLEVELAND

DETROIT CINCINNATI PITTSBURGH

—Mean Satisfactory SERVICE

Mechanics appreciate our **Rebuilt** Machines.

Purchasers are protected by our **guarantee.**

We Have a Large Selected Stock and Solicit Your Inquiry.

Warehouse and Shop Located at
888 East 70th St., CLEVELAND, OHIO
The Motch & Merryweather Machinery Co.

Good Tools Mean

BORING MILLS

30" Bullard Vertical Turret Lathe, single head on stationary rail. This machine has had very little use; condition equal to new ..... $ 550.
36" Niles, 2 heads on rail. An old machine but in first-class operating cond. Guaranteed to be accurate.. 325.

GEAR CUTTERS

No. 3 Adams-Farwell Gear Hobber, 28" cap., perf. cond. $ 850.
No. 6 Fellows Gear Shaper; Serial number 5060; used very little, like new ..... 450.

SHAPERS AND PLANERS

26" Cincinnati cone driven, vise and c. s., ex. condition $ 250.
24" G. & E. cone drive, back geared, rebuilt ..... 665.
21" Walcott & Woods b. g., vise and c. s. ex. cond..... 450.
20" Smith & Mills, single pulley gear box drive ..... 625.
16" Queen City, back geared, like new ..... 425.
16" American, back geared, excellent condition ..... 365.
16" Smith & Silks, sgl. grd., c. s. and vise good cond.... 235.
16" Hendey friction type, c. s. and vise, good cond. .... 170.
14" Juengst, belt dr., univ. vise and c. s., excellent cond. 95.
24"x24"x 6' Pease Planer, fair condition ..... 190.
32"x32"x8' Cincinnati Planer, 2 heads, excellent condition 850.
32"x32"x14' Pond Planer, 2 heads, excellent condition... 850.

PRESSES

P-6 Ferracute Stiles-type; wt. 13,000; used one month .. $ 700.
No. 4 Chas. Leffler, o. b. i., like No. 19 Bliss, good cond. 185.
No. 16 Stoll, o. b. i., geared, wt. 6000, excellent condition 590.
No. 6 Waterbury-Farrell o. b. i. trimming and stamping, side cutter, wt. 8000. A rugged, unbreakable press in good condition ..... 675.
Bliss 3-A Hornnig, adjustable table, auto. feed, like new 375.
Bliss triple drawing press, like No. 64, wt. 6000, perfect condition. An exceptional bargain for anyone that can use it ..... 750.

A. R. Marsh Machinery Company,

Better Work

Danielson Gap Press, op.-bk., grd., wt. 3500, good cond. $ 250.
No. 511 Triple acting back geared Bliss, excellent cond. 750.
No. 55 Atlas Power Forcing Press, excellent condition 135.
30 Ton Hydraulic Watson & Stillman Forcing Press 250.
No. 39-W Bliss Wiring Press, excellent condition 250.
27—misc. straight side Waterbury-Farrell presses, wt. 2500 lbs., stroke 1⅛"; $150. to 225.

DRILLS

4' American Radial, late type, gear box drive, like new $1250.
4' American Sensitive Radial, excellent condition 150.
36" Blaisdell pwr. fd., bk. grs., sl. hd., exceptionally fine and powerful drill, nearly new 275.
28" Superior, pwr. fd., bk. grs., sliding head, good cond. 235.
28" Bickford, pwr. fd., bk. grs., sliding head, good cond. 125.
25" Snyder, pwr. fd., bk. grs., sliding hd., excellent cond. 215.
25" Barnes Camel-back, all grd. t. a., p. f., b. g., ex. cond. 300.
24" Sibley, sliding head, power fd., bk. grs., good cond. 175.
24" Mechanics p. f., b. g., slid. hd., tap. att., good cond. 275.
22" Hoeffer, pwr. fd., bk. grs., sliding head, good cond. 135.
20" "BB" Upright, power feed and back gears, new 133.
20" 4-spindle Silver, pr. fd. and back grs. on each spindle, excellent condition. Rebuilt round tables replaced by large square ones with oil channels. Price only 300.
20" Rockford back grd., hand feed, tapping attachment, excellent condition 125.
20" Sibley & Ware. power feed, good condition 55.
16" Kerns high speed, ball bearing, tapping att., like new 175.
16" Henry & Wright high speed, ball bearing ex. cond. 90.
15" Henry & Wright high speed, ball bearing, ex. cond. 80.
14" Barr 2-spindle, No. 1 taper, excellent condition 90.
14" Henry & Wright sensitive, 2-spindle, good condition 90.
8 Spindle Multiple Bausch, up to ⅝" good condition 450.
No. 16-D National Multiple spindle, good condition
No. 18-D Western Multiple spindle, good condition
No. 21-D National Multiple spindle, like new

(Continued on next Six Pages)

4900 West 73rd St., Cleveland, Ohio

Worth-while Tools

(Continued from Preceding Pages)

Drills—Continued

4 spindle Allen, high speed, ball bearing, like new.....$ 475.
3 spindle Colburn, No. 2 heavy-duty mfg., ex. cond..... 950.
4 spindle 22½" Barnes, sl. hd., bk. grs., pr. fd. individual clutch for each spindle. Good condition..... 400.
Single spindle Colburn No. 2 heavy-duty mfg., ex cond. 315.

LATHES

32"x14' Bridgeford, self-oiling, 12 speed geared head, quick change gears, taper attachment, arranged for motor drive. Weight 17,400 lbs.
This lathe has seen very little service and is a beauty. Perfect condition throughout. Complete equipment including chuck.

Price on application.

42"x12' Gleason heavy-duty, loose change gears, triple geared face plate drive with 38" 4-jaw chuck. In very good condition throughout. For short, heavy work this is a real bargain at.....$ 650.
36"x16' Gleason heavy-duty, loose change gears, triple geared face plate drive with heavy, 4-jaw Independent chuck. Good condition throughout. A good, serviceable lathe for only..... 750.
32"x16' Pittsburgh with loose change gears, fair condition 550.
26"x9' Bridgeford with quick change gears, double back gears, heavy-duty. A powerful, accurate lathe in good condition, strictly modern..... 765.
24"x11' Chard, quick change gears, double back gears, oil pan and pump. Heavy, powerful, accurate lathe. Complete equipment, new chuck. Like new, used but two months. If you want something that is really good, this is it!..... 1050.
21"x10' LeBlond heavy-duty, late type, positive clutch, 90% new. Complete equipment, new chuck. Wherever we sell this lathe it will make a friend for us. 725.

A. R. Marsh Machinery Company,

at Moderate Prices

20"x12' Hendey yoke-head type, late number, complete equipment, like new ..... $ 850.

20"x10' Prentiss, geared head, heavy-duty. good cond.... 490.

18"x10' Hendey, quick change gears, taper attachment, good 4-jaw chuck. A good serviceable lathe in good working order throughout ..... 490.

18"x8' Boye & Emmes, late type, heavy-duty, like new, used only few months. Quick change gears, double back gears, complete equipment including chuck.. 590.

18"x10' Boye & Emmes, late type, double apron, quick change gears, double back gears, taper attachment, complete equipment including new chuck. Replaned and thoroughly rebuilt. This lathe will certainly please you ..... 675.

18"x10' Lodge & Shipley double back gears. taper attachmeet, good 4-jaw chuck. Good serviceable lathe in good working order throughout ..... 490.

18"x8' Greaves & Klusman late type, heavy-duty, quick change gears. Complete equipment with new chuck, guaranteed like new ..... 535.

18"x11' Chard with semi-quick change gears, heavy-duty complete equipment including new chuck. Ex. cond. 350.

18"x9' Chard with semi-quick change gears, heavy-duty, complete equipment including new chuck. Excellent condition ..... 290.

18"x8' Walcott heavy-duty, quck change gears, double back gears, regular equipment with new chuck. We are using one of these in our own shop and know they are excellent lathes. Used but three months and guaranteed equal to new. A real buy at ..... 490.

18"x9' Reed, old type, good condition. The service still in this lathe will surprise you ..... 135.

16"x6' LeBlond, quick change gears, overhauled. Good condition ..... 325.

16"x8' Sidney heavy-duty, quick change gears, overhauled, in very good condition ..... 315.

(Continued on next Four Pages)

4900 West 73rd St., Cleveland, Ohio

Send us your require

(Continued from Preceding Pages)

Lathes—Continued

16"x8' Monarch, quick change gears, taper attachment Complete equipment with new chuck. Good cond. $325.

16"x8' LeBlond, loose change gears. Regular equipment with chuck. Good condition 175.

16"x8' Monarch, loose change gears. Regular equipment with chuck. Good condition 150.

16"x10' South Bend loose change gears. Regular equipment with chuck. This lathe is nearly new and on account of its length will be very desirable for long work 210.

14"x8' Lodge & Shipley with quick change gears, regular equipment with chuck. Good cond. a Bargain at 195.

14"x6' Hendey, late type, yoke head. Replaned and rebuilt by our Hendey lathe expert. Parts needing repairs replaced by genuine Hendey parts. This lathe is equal to new and a real buy at 550.

14"x'6 Hendey same as above but with taper attachment. If you want a Hendey for tool room work we will guarantee these 625.

14"x6' LeBlond quick change gears, completely overhauled. Regular equipment with new chuck 235.

16"x6' Lodge & Shipley late type, excellent condition. In use in our machine shop and guaranteed to do accurate tool work. Regular equip. and new chuck. 395.

14"x6' Willard, semi-quick change gears, taper attachment. Used but a short time in tool room. Regular equipment with chuck. This lathe is sure to please the most exacting 185.

14"x6' Monarch with loose change gears. Regular equipment with chuck. Good condition 115.

14"x6' Reed with loose change gears. Good condition 90.

12"x5' Hendey, quick change gears. Regular equipment with chuck. A nice little lathe in very good cond. 275.

12"x6' Simplex single pulley drive, rebuilt, in perfect mechanical condition. Complete with regular equipment, new chuck and motor 425.

A. R. Marsh Machinery Company,

ments. Mail us your list

MILLING MACHINES

No. 1 Garvin Universal, cone dr., dividing hd., vise, etc. An old machine in very good condition throughout $ 225.
No. 1½ Hendey Universal, single pulley drive, grd. feeds and speeds, dividing hd., vise, etc. Like new 1350.
No. 1½ American, pl., heavy-duty, grd. fd., div. hd., vise, etc. Ex. condition. Will satisfy the most exacting 425.
No. 1½ Valley City, plain, geared feed, excellent cond. 350.
No. 1½ Ohio plain, in fair working order. Good for general garage use 175.
No. 2 Kempsmith, plain, geared feed 3 ways. This machine is right up-to-the-minute, practically new. Guaranteed to be O. K. for accurate work, Dividing heads, vise, etc. A really good buy for 790.
No. 2 Cincinnati, pl., grd. fd., div. hd., vise, etc. Ex. cond. 485.
No. 2 Brown & Sharpe Plain, back geared, complete with vertical attachment, "BB" vise, arbor, c. s. In perfect condition. Price with Garvin Index Heads 600.
Price without Index Heads 550.
No. 2 B. & S., pl., vise. An old machine that has been carefully used and is in fine condition throughout 235.
No. 2 Cincinnati Vertical, like new 775.
No. 2 Cincinnati Automatic, like new 400.
No. 3 LeBlond, plain, geared feed 3 ways. Good cond., if you want the bargain of your life, don't overlook this 450.
No. 3 Brown & Sharpe plain, geared feed three ways, dividing head and vise. Good condition 650.
No. 4 Brown & Sharpe plain, geared feed three ways, thoroughly rebuilt and guaranteed. Compl. with vise 750.
No. 4 Cincinnati plain, geared fd. three ways, thoroughly rebuilt and guaranteed to be like new 600.
No. 4B Becker Vertical, excellent condition 390.
No. 5 Becker Vertical, fair working order 235.
Gooley & Edlund, Briggs-type, good condition 175.
No. 13 Pratt & Whitney Lincoln-type, excellent condition 175.

(Continued on next Two Pages)

4900 West 73rd St., Cleveland, Ohio

Don't forget the "BB"

(Continued from Preceding Pages)

SCREW MACHINES AND TURRET LATHES

24" Libbey high power tur. lathe, 4⅛" hole thru spindle Equipped for motor drive but without motor. Good condition throughout. A real buy at	$ 850.
24" Gisholt 6½" hole through spindle. Extra fine cond. Guaranteed	900.
3x36 J. & L., late type, 2-spindle, excellent condition	550.
3x36 J. & L., late type, geared feed, bar equipment	425.
3x36 J. & L., friction feed, chucking equip. good cond.	175.
2x24 J. & L., geared feed, bar equipment, good cond.	350.
No. 7 Bardons & Oliver, late no., power feed to cross slide and turret, friction grd. hd., nearly new	650.
No. 10 Foster, 3¾" hole thru spindle, pr. fd. to turret and cross slide. Excellent condition	450.
No. 6 Warner & Swasey, late no., excellent condition	575.
No. 4 Warner & Swasey, late no., good condition	475.
No. 4 Bardons & Oliver, good condition	300.
No. 2 Foster plain head, excellent condition	150.
No. 2 Foster, power feed and back gears, ex. condition	225.
No. 2 SP Garvin, collets and extra equip., like new	275.
No. 1 SP Garvin, like new	125.
No. 33 New Britain Automatic Chucking Machine	725.

GRINDERS

No. 60 Heald Cylinder Grinder, late type, new grinding head, new graduated angle iron full width, machine like new throughout	$ 800.
12x48 Brown & Sharpe, plain, like new	700.
12x52 Landis self-contained, single pulley dr., like new	950.
No. 1 Wilmarth & Morman Tool and Cutter, like new	400.
No. 1 Norton Tool and Cutter, good condition	225.
No. 2 Brown & Sharpe Universal, rebuilt and guaranteed	425
8" Heald Rotary Surface Grinder, excellent condition	175
Oakley Tool and Cutter Grinder, compl. equip., like new	375.
No. 103 Rivett Internal Grinder, like new	250.
Springfield Planer-type Surface Grinder, 14" between housings, excellent condition	300.

A. R. Marsh Machinery Company,

Vise and Drill—Page 51

MISCELLANEOUS

Baker Table Saw, double Arbor, like new	$ 175.
12" American 4-side Moulder, excellent condition	750.
6" American 4-side Moulder, good condition	250.
½" capacity Barr, motor driven, Tapper, like new	175.
1" Landis Bolt Cutter, latest type, like new	
No. 6 Jackson Die Sinker, good condition	550.
No. 4 Greenerd Arbor Presses, excellent condition	65.
2 Ton Whiting Crane Ladle. new, never lined	90.
No. 1 LaPointe Broach, excellent condition	190.
22" swing Cincinnati Pulley Lathe, excellent condition	600.
H. & G. Chaser Grinder, bench type, new	60.
Geometric Chaser Grinder, pedestal type, nearly new	150.
12x18 Boston Scale & Machine Co. Angle Plate, excellent condition	200.
16" Safety head Jointer, excellent condition	75.
Hendey Centering Machine, good condition	65.
Warner & Swasey Double End Facer and Tapper, ex. cond.	650.
Yoder Fending Rolling Machine. practically new	650.
⅜" Russell Swaging Machine, excellent condition	110.
5/16" Rickert-Shafer Tapper, pedestal type, good cond.	50.
No. 2 Garvin ¾" capacity excellent condition	225.
24" Silver Jointer, good condition	175.
16" Gordon Planer, excellent condition	130.
4-Sp. Moline hole-hog, ½" capacity, ex. cond.	375.
⅜" capacity Leland-Gifford, ball bearing, high speed Bench Drill. Good condition	60.
⅜" capacity "BB" Bench Drill, new	21.
with ⅜" drill chuck	25.
6 Sp. ½" Acme Tapper, vertical good condition	190.
38" Wright Metal Cutting Band Saw, like new	160.

If the tools you need are not listed send us your requirements. We have hundreds of items never advertised.

1900 West 73rd St., Cleveland, Ohio

50% Discount

on High Quality

Cutters

Due to the large quantities in which these cutters were manufactured, it is possible for us to offer this unusual discount. All tools listed in our SPECIAL STOCK LIST are guaranteed to be of fine quality and high class workmanship.

The discount of 50% applies to cutters listed only and all items are subject to prior sale.

Among the many styles listed are the following:

Plain Milling Cutters
Side Milling Cutters
Metal Slitting Saws
Concave Cutters
Convex Cutters
Angular Cutters
Straight Shank End Mills
Slotting End Mills
Keyway Cutters
Bevel Gear Cutters
Counterbores
And Many Others

Write for this Special Stock List today

And take advantage of this unusual opportunity to obtain high grade, finest quality cutting tools

AT HALF PRICE!

The Sommer & Adams Company
18511 Euclid Ave., Cleveland, Ohio

NEW 3 PHASE MOTORS CHEAP. 3 H. P. $54.50; 5 H. P. $65.50

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, grd. hd., m. d.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
18"x10' American, quick change.
19"x10' LeBlond extra heavy duty.
20"x 8' American, geared head.
20"x10' Hamilton, rapid production.
20"x10' Prentice, taper attachment.
22"x8'6" Greaves & Klusman.
24"x12' Bradford.
24"x24' Prentice, with raising block.
8x60" & 3½x60" Fitchburg, Lo-Swing

TURRET LATHES and SCREW MACHINES

Acme ⅞" cap., wire feed column.
No. 4 Defiance, 1⅛" capacity.
1⅛" capacity Smurr & Kamen.
1½" Milholland.
2x24 and 3x36 J. & L.
No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
No. 52 National Acme.
1⅛" 4-spindle Gridley.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American tool room.
16" O. & S., b. grd., new, low price.
24" O. & S. back geared crank.
16" Steptoe, b. g.

PRESSES

No. 10 and No. 15 Excelsior, foot.
No. 6-I Cleveland, o. b. i.
Nos. 3-A & 5-A Willard inclinable.
Nos. 1, 1½, 2, 2½ Robinson, new.
Emco, bench, for radio parts.
No. 2½ Toledo, o. b. i.

DRILLS and RADIALS

No. 1 Baush multiple.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 26", 28" and 32", sliding hd.
32" Hoefer, sliding head.
6' Ceiling drill.
25" Kokomo high speed.
4-spindle Reed sensitive.
44" Stover.
Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 5-C Becker, vertical.
No. 25 Bilton.
No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7½x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x15" Fitchburg plain.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
J B X, W. & M. tool and cutter.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.

MISCELLANEOUS

Band saw, Clark, compound.
Band saw, Napier 10"x10'.
Blower, No. 6 Piqua, pressure.
Blower, positive pressure, Leiman
Boring mill, Colburn No. 3, tur. hd.
Boring mill, Sellers 56" car wheel.
Boring mill, 72" column.
Boring mill, vertical, two heads.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 8x8 and 9x8.
Gear cutter, No. 3—26 B. & S.
Gear miller, Bilton No. 1.
Hammer, 150 lb. Standard drop.
Pipe machines, 2", 4" & 6".
Planer, 36"x36" Gray, heavy duty.
Planer, 36"x36"x14' Gray, 2 heads.
Planer, 42"x42"x12' Gray, 2 heads.
Pumps, Gould triplex, 6½x8".
Punch & shear, ½x4x10" throat.
Riveting hammers, High Speed Nos. 2, 3, 4.
Scale, 1500 lb. Toledo, dial type.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Threading mche., W. & P. 2-spindle.

THE OSBORNE & SEXTON MACHINERY COMPANY
COLUMBUS Dept. H. OHIO

Our Latest Design
of
Cone Driven Lathes

PRACTICALLY NEW

18"x 8' 3-Step Cone, Double Back Gear.
18"x10' 3-Step Cone, Double Back Gear.
20"x10' 3-Step Cone, Double Back Gear.
20"x12' 3-Step Cone, Double Back Gear.
24"x10' 3-Step Cone, Double Back Gear.

The above lathes are being replaced in our shop by our Coneless Lathes

ALSO

1—28"x12' Old Style Quick Change Gear, Double Back Gear, Cone Driven Lathe.

Full description and prices upon request

The Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave., Cincinnati, Ohio

Forging, Bolt, Nut, Rivet and Structural Machinery

1", 1½" 2", 2½", 3", 4", 5" Ajax Upsetters.
¾", 1", 1¼", 2½", 3" and 4" Acme Upsetters.
1" and 2" National Upsetters, iron beds.
Nos. 2, 3, 4, 5, 6 and 7 Williams-White Bulldozers.
No. 22 Williams WhiteVert. Bulldozer, M. D. with motor, new.
50, 75, 100, 150, 200 and 500 lb. Bradley Upright Hammers.
40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
2000 lb. Chambersburg, late type Steam Drop Hammer.
1000 lb. Billings & Spencer Board Drop, purchased 1923.
Miner & Peck, 6 poppet drop hammer.
No. 14 Erie Geared Trimming Press, wt. 22,000 lbs.
No. 52 Bliss straight side press.
No. 55½ and No. 56 Toledo Geared Trimming Presses.
No. 5 Stiles Solid Back, Single Geared Press, Motor Drive.
No. 2 Doelger-Kirsten Alligator Shear, cap. 2¾" round.
Williams-White Bar Shear cap. 1½"; Guillotine Shears 1½", 4".
1", 1½" 4" Single Spindle Landis Threading Machine.
½", 1", 1½", 2½", 2-spindle Landis Threading Machines.
1½", 2", 2-spindle Acme Class A Threading Machines.
½", 1", 1½" 6 & 8-spindle Vertical Semi-auto. Nut Tappers.
¼", ⅜", ½", ⅝" and 1" Thread Rollers.
No. 10 Waterbury side feed, ¼" cap., Thread Roller.
11 Waterbury and Manville Cold Headers, 3/16" to 1".
Plate Shear, capacity 8' of 1".
Long & Allstater Multiple Punch, 84" ram, weight 30,000 lbs.
L. & A. Size B Dbl. End Punch, 18" thrt. each end, 2¼" thru 1½".
Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. ¾" thru ¾".
Beatty Sgl. End Punch, 26" thrt., plain table, cap. 1" thru 1".
No. 6 Whiting Sgl. End Punch, arch. jaw, cap. ¾" thru ¾".
Ryerson Combination Punch, Bar and Angle Cutter.
Allen Pinch Bug Riveter, cap. ⅞" rivets.
No. 3 Ryerson high speed Friction Saw, cap. 24" beams.
No. 2 Ajax Hot Saw and Burring Machine.
12' Wall Radial Drill for structural work.
Detroit 5-spindle Semi-automatic Drills.
Baker, R. & L. & Elwell-Parker Elec. Elevating Platform Trucks.
Meeker Galvanizing Plant, complete.
Ideal Auto. Loading Tumbling Barrel; Reg. Tilting Tumb'g Barrel.
Wire Straighteners, 3/16", 5/16", ½", ⅝" cap.
100,000 lb. Tinius Olsen Testing Machine, motor drive.

Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave., Chicago, Ill.

LOOK—THESE—OVER

LATHES

14x6 Hendey q. c.
14"x 6' Monarch, q. c.
18"x 8' Bradford, q. c. g.
18"x 8' Reed-Prentice grd. hd.
17"x 8' National, q. c. g.
20x8 American q. c.
38"x28' American, geared head.
26"x14' American, l. c. g.
36"x20' Bradford triple gear.
42"x24' Bradford.

No. 5 LeBlond Heavy Duty Miller Single Pulley or D. C. Motor Drive

RADIALS AND DRILL PRESSES

3' Carlton, G type, gear box.
4' Dreses m. d. thru. gear box
6' Dreses, motor drive.
24" Cincinnati Sli. Hd. b. g. p. f.
24" Aurora, sliding head b. g. p. f.
8-spindle Bausch multiple.

PUNCH PRESSES

No. C-2 Ferracute o. b. inc.
No. 18 Bliss, o. b. inclinable, (4).
No. 3-A Willard, o. b. inc.
No. 5 Beauroth o. b. i., geared.
No. 3 Bliss, stiff back.
No. 17 Williams & White, 24" thr.
No. 6 Whiting, single end, 12" thrt.
No. 103 Bliss.
No. 6 Waterbury-Farrel, stiff back.
No. 64 Consolidated s. s., 18" bet

PLANERS AND SHAPERS

24"x 6' Powell, 1 head.
30"x 8' Cincinnati, 1 head.
30"x12' Cincinnati, 2 heads.
48"x36"x12' Cincinnati, 2 heads.
24" Kelley shaper, b. g.
25" Smith & Mills b. g.
16" Smith & Mills, cone drive.
16" Gould & Eberhardt shaper.
16" Steptoe b. g.
15" Smith & Mills, cone drive.

GRINDERS

No. 1 Norton tool and cutter gr.
No. 3 Wilmarth & Marmon surface.
No. 2 B. & S. surface.
No. 2 Walker surface.
No. 60 Heald, long table.
No. 60 Heald, short table.
No. 22 Landis, 16x42".
16x66 Queen City plain.
No. 1½ Landis universal.

MISCELLANEOUS

Bending rolls, 48" Niagara.
Bolt cutters, 2", 1½" & 1" Acme.
Bolt cutter, 2" Landis long bed type.
Boring mill, 36" Gisholt turret head, cone drive.
Boring mill, 42" Bullard vertical.
Boring mill, Fosdick 3" horizontal.
Boring mill, 10' Niles, 2 heads.
Chain hoists, various sizes.
Gas furnaces.
15" Gleason gear generator.
Hack saws, 2—13x16 Peerless m. d.
Hammer, steam, 800 lb. Niles.
Keyseater, No. 1 Baker.
Millers, hand, (6).
Multiple Punch, 72", 15" throat.
Presses, 30 & 50 ton Lucas forcing.
Press, 44" Wood hydraulic tire press.
Shear, 60" power square, 14 gauge.
Tooth rounder, 12" Ingle.
Turret lathe, No 2 W. & S. (2).
Turrett, 24" Gisholt 6¾" h. spindle.

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16"x 6' Flather	75.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear, late	425.
16"x 6' Pratt & Whitney Geared Hd., taper, motor dr.	600.
18"x 8' Hendey, taper	400.
18"x 8' Cincinnati, Turret on Shears	250.
18"x 8' Lodge & Shipley, quick change taper	375.
18"x10' Lodge & Shipley, quick change	375.
20"x10' LeBlond quick change	400.
20"x14' LeBlond loose change, taper	375.
22"x10' Niles loose change	300.
24"x12' Pond Heavy Quick change	400.
30"x12' Star, loose change	300.
42"x16' Niles triple geared	600.
3x36 Jones & Lamson, chucking	250.
3x36 Pratt & Whitney Turret	600.
No. 6 Foster Turret, air chuck	350.
2-spindle Allen Drill, late	200.
3' American Radial, cone drive	475.
4' Bickford Radial, single pulley, gear box	600.
No. 3 Kempsmith Plain Miller, late type, 95% new	750.
No. 3 Brown & Sharpe Universal, complete	900.
20" Queen City Shaper, back geared	500.
24" Barker Shaper, back geared	400.
24"x6' Lodge Davis Planer, heavy	400.
42" Throat Lenox Splitting Shear, ¾" capacity	500.
24"x6' Ingersoll Slab Miller	500.

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1—Set of Niles-Bement-Pond Pyramid Type Bending Rolls, capacity 12' of 5/16" plate. Top roll 12" diameter. Bottom rolls 9½" diameter. Complete with 15 H. P., 230 volt, D. C. variable speed motor, with starter and control.

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1—King 42" Vertical Boring Mill, latest type, 2 heads, power rapid traverse, all geared positive feeds.

1—King 40" Vertical Boring Mill, latest type, 2 heads, power rapid traverse, all geared positive feeds.

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21—26"x10' Canada.
12—25"x12' LeBlond.
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9—24"x11' Cisco.
2—21"x10' LeBlond.
1—20"x10' Hamilton, M. D.
1—20"x 8' LeBlond.
1—18"x 8' Hamilton, M. D.
1—17"x8' LeBlond.
1—16"x14' American, Geared Head.
1—16"x 8' Monarch.
1—16"x 6' Sidney.

MILLERS

1—No. 6 Becker Vertical.
1—No. 4 Cincinnati, s. p. d.
1—No. 2B Milwaukee Vertical.
1—No. 5 Ingersoll Comb.
2—No. 2-B Milwaukee, s. p. d.
2—No. 24 Ohio.
1—No. 25 Becker.
1—No. 2 Kempsmith.
1—No. 3 Kempsmith Plain.
1—No. 3 Kempsmith Universal.

PLANERS

1—60"x48"x30' Hamilton.
1—42"x42"x22' Niles-Bement-Pond.
3—36"x36"x18' Cincinnati.
1—30"x30"x14' N. B. P.
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1—No. 56 Ferracute.

PUNCHES

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1—No. 4 Kling.

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2—72" Gisholt.
1—42" King.
1—36" Bullard, New Era.
1—30" Gisholt.

BORING MILLS—Horizontal

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5—No. 1 Barrett.
6—2" Bar Rockford.

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1—No. 30 Natco.
2—No. 14 Natco.
1—No. 2 Baush.
1—22" Barnes.
1—28" Rockford.
1—No. 315 Baker.
2—No. 314 Baker.
2—No. 14 Colburn.
1—No. 24 Foote-Burt.

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6—24"x24"x12' Ingersoll.
1—24"x24"x 8' Ingersoll.
1—24"x13"x20' Ingersoll.
1—32"x32"x12' Ingersoll.

GRINDERS

2—22" P. & W. Vert. Surf.
1—20"x96" Landis.
3—14"x50" Norton.
3—10"x72" Norton.
5—10"x50" Norton.
3—10"x36" Norton.
6—6"x32" Norton.
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20"x14' Reed l. c. g.	325.
20"x 8' Bradford q. c.	450.
16"x 9' Chard latest type, q. c.	395.
14"x 6' Hendey Yoke Head	400.
14"x 8' Willard q. c.	195.
14"x 5' Willard, semi q. c, late type	165.

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No. 3 LeBlond Universal, complete	1050.
No. 3 LeBlond Plain, 3 s. c. d.	575.
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24" Ohio Back Geared Crank Shaper, cone drive	650.
20" Ohio Back Geared Crank Shaper, cone drive	525.
16" American B. G. Crank Shaper, cone drive	425.
15" Springfield Crank Shaper, cone drive	275.
24" Hendey Shaper, friction geared drive	250.

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5' American Radial, single pulley	$1300.
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2½' Dreses Radial, cone drive	225.
48" U. S. Electric Co. Radial, motor drive	150.
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20" Barnes Drill Press, p. f.	85.
20" Silver Drill Press, b. g., p. f.	90.
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26" Rockford Mechanic b. g., p. f., latest	250.

Miscellaneous

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25 lb. Bradley Cushion Helve Hammer	150.
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Pettingell Rotary Shear, 30" throat with motor	265.
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No. 2 Garvin Tapping Machine	195.
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60"x30' Niles-Bement-Pond.
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30"x40' Lodge & Shipley.
26"x14' McCabe "High Duty."
26/48"x14' Double Spindle.
26"x14' Niles-Bement-Pond.
24"x30' LeBlond.
26/44"x10' McCABE Dbl. Spdl.
18"x12' Schumacher & Boye.
18"x10' McCABE "High Duty."
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42" Car Wheel Lathe.

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Bridgeport Roll, 60x12.
Modern Cylindrical, 8x30.
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Special Roll Grinder with Crowning Attach.

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No. 4 Brown & Sharpe, B. G.
No. 5 Brown & Sharpe, Vertical.
No. 5 Hendey, Lincoln Mfg. Type.
No. 22 Brainerd, Plain.
Newton Hor. and Vertical Spindle.

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21" Swing Gisholt, Gap Turret.
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Auto Turrets for 20" Lathes.

Miscellaneous

Cold Saws, Espen-Lucas, 28" & 42".
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300 Ton Wheel Press.
16" Stroke Shaper.
12" Stroke Shaper.
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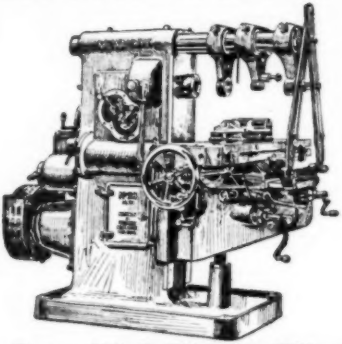

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1—Baush 42" vertical, 2-head.
1—Niles 42" vertical, 2-head.
1—Colburn 54" vertical, 2-head.
1—Rockford No. 2 horizontal.
1—Bement-Miles horizontal.
1—Cleveland 2½" bar, horizontal.

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4—Cleveland ⅝", ¾", ⅞", 1⅛" "B".
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8—New Britain No. 24.
2—National Acme Nos. 52, 54.
11—P. & J. No. 5-A, No. 6-A.

DRILLS—Multiple Spindle
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1—Natco No. 11 rect. head.
7—P. & W. Nos. 11, 12, 13.
1—Moline No. 5-D, 6-spindle.
1—Foote-Burt No. 25.
3—New Garvin 6-spindle.

DRILLS—Upright and Radial
2—Allen 4-spindle, h. s., b. b.
2—Colburn Nos. 2 and 4.
1—Barnes 4-spindle gang, 20".
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1—New No. 3 Turner vertical.
3—Baker No. 310.
1—Baush 6' radial.
1—N.B.-P. 96" plain radial.

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1—Gray 38x38x28', 3 heads.
1—Putnam 48x48x12', 2 heads.

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9—Gisholt 24", 6⅛" hole.
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4—J. & L. 2x24, 3x36.
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2—Libby 26", 4⅛" and 7⅛" hole.
2—W. & S. No. 4.
6—Foster Nos. 4, 6.
1—Acme Fox Monitor.
1—W. & S. No. 6, b. g., p. f.
2—Gisholt Simplimatics.

MILLING MACHINES
1—B. & S. No. 3A universal.
1—Cincinnati No. 3 universal.
5—B. & S. Nos. 2, 3, 4, plain.
4—Cincinnati Nos. 3, 4, 5 plain.
1—Hendey Norton No. 3 plain.
1—Kempsmith No. 3 plain.
1—Becker No. 7 duplex.
11—Becker Nos. 3H, 4B, AB, 5C, C1, vertical.
2—Cincinnati No. 4 vertical.
15—P. & W. 5" automatic.
9—P. & W. 4½x12, 6x14, 6x48, 6x80 thread.

SHAPERS AND SLOTTERS
1—Stockbridge 20" shaper.
1—Ohio 22" crank shaper.
1—Gould & Eberhardt 24" shaper.
1—Columbia 28" shaper.
1—Queen City 16" shaper.
1—Rhodes 7" vertical shaper.

PRESSES
5—Bliss No. 52.
1—Toledo rack and pinion.
25—Waterbury Farrel double connection, 2" and 4" stroke.
2—Z. & H. No. 8½ percussion.

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3—Acme ½" 2-spindle.
3—National 1½", 2-spindle.
1—Acme 4" single spindle.

GEAR CUTTERS
5—Barber Colman Nos. 3 and 12.
7—B. & S. 3x36, 3x26, 4x36, 13H.
6—G. & E. No. 18-H.
20—Fellows Nos. 6, 61, 615.
11—Gleason 6", 11", 16".
1—Gleason 15" spiral bevel finisher.
3—Fellows Gear Grinder.
10—Cross gear tooth rounders.

LATHES
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4—Seneca Falls 12"x6', q. c. g.
3—Davis 12"x6', q. c. g., m. d.
10—South Bend 15x5, 18x8 gap.
1—P. & W. 16x7 tool room.
1—Bradford 16"x12'.
1—Fay & Scott 20-42", gap.
1—Whitcomb 24"x15', d. b. g.
1—Walcott 26"x10'
1—Bridgeford 26x12', q. c. g.
1—Greaves-Klusman 26x12'.
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1—Bridgeford 42x38', geared head.,
3—LeBlond 26x10 duplex crank.
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7—Landis 6x18, 10x20, 10x24, 10x36, 12x36 plain.
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1—Springfield-Brandes 45" rotary oscillating surface.
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20" Champion.
20"—22" Aurora.
24" Sibley B. G.
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8' Pond Radial.

LATHES: 14"x6' Lodge & Shinpley, q. c. g., taper att.....$290.
18"x8' 6" Greaves-Klusman q. c. g.
24"x12' Rockford. taper att.
24"x15' Schumacher-Boye cone head.
26"x16' Prentice, taper attachment.
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MILLING MCHES.: No. 1½B Milwaukee Vertical.
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Beatty No. 7, 42" throat, cap. 1"x1".
Cleveland E. F., 36" throat.
No. 2 Hilles & Jones hor. punch, 8" throat.
Beatty s. e., 48" throat, capacity 1¼"x1¼".
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GRINDERS: 38" Landis Roll Grinder.
No. 5 Landis Cylinder.
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Cleaning Barrel 48" dia. 72" long with motor.
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Floor Crane, No. 2 Panama.
Gear Cutter, No. 6 Brown & S., cap. up to 72"x13".
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Planer, Cincinnati 42"x36"x12', 2 heads.
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26"x17' Pond, motor.
28"x30" Pond, motor.
30"x45' Pond, motor.
42"x17' Pond, motor.
54"x28' American, motor.

Turret Lathes

3"x36" P. & W., belt.
34" Gisholt, motor.

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42"x42"x26' Pond, 4 hds. rev. m. d.
48"x48"x20' Pond, 4 hds. rev. m. d.
48"x48"x27' Pond, 4 hds. rev. m. d.
72"x72"x36' Pond, 4 hds. rev. m. d.
96"x72"x25' Pond, 4 hds. rev. m. d.
144"x120"x26' Pond, 4 hds. rev. m. d.
10'x10'x34' Betts, 4 hds. belted m. d.

Upright and Radial Drills

No. 1 Bement Vert. Cotter, Belt.
5' Right Line Full Universal motor.
6' Ridgway Plain, motor.

Millers

Whitney Hand, belt.
No. 3H LeBlond Universal, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.
6"x132" P. & W. Thrd. Miller, Belt.

Emery Wheel Stands

No. 6 Blount Grinder, Belt.
18" Grinder and Polisher, belt.
30" Grindstone Frame, belt.

Shapers and Slotters

20" Bement sgl. hd. Shaper, motor.
22" Bement Slotter, motor.

Gear Cutters

24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.

Grinders—Cylindrical and Tool

LeBlond No. 1 Cutter, belt.
No. 3 B. & S. Cutter, belt.
No. 2 Sellers Tool, belt.
No. 3 B. & S. Universal, belt.

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3½" Sp. Ridgway Hor., motor.
4½" Spindle Bement Hor., motor.
5" Sp. Betts Horiz., belt.
5½" Sp. 80" Bement Horiz., belt.

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5 ton, 3 motor, 34' 8" span.
5-ton, 3-motor, 35' 7" span.
10-ton, 3-motor, 34' 8" span.
30-ton, 4-motor, 34' 8" span, 5-ton aux
25-ton, 4-mtr., 71' 11" span, 5-ton aux.
40-ton, 4-mtr., 71' 11" span, 5-ton aux.
2-ton, 2-motor, wall crane, 19' arm.

Miscellaneous

Y & T 3-ton Hand Crane, 35' 6" span
Bement 1100 Lbs. S. F. Stm. Hammer.
48" 200-ton Niles Hyd. Wheel Press, belt.
4" capacity Espen-Lucas Cold Saw
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7'x14' Norcross Jolting Mach.
20" Norcross Jarring Mach.
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24"x24" Tabor Molding Mach.
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Universal Grinding Machines

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Guaranteed as Accurate as New Machines

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2—14"x6' Hendey T. A.
1—14"x6' LeBlond.
1—14"x6' American T. A.
1—16"x7' Hendey T. A. with reliev. att., draw-in bar, collets, pan bed.
2—16"x8' Hendey T. A.
1—18"x8' Hendey T. A. draw-in and collets.
1—18"x10' Hendey T. A.
1—22"-44" Harrington gap.
1—20"x8' Monarch.
1—24"x12' Boye & Emmes q.c., t.a.

MILLS

2—No. 1½ Brown & Sharpe univ.
2—No. 2 Brown & Sharpe univ.
1—No. 2-B Hendey universal.
1—No. 2 Cincinnati universal.
1—No. 2½ LeBlond universal.
2—No. 2 Valley City universal.
2—No. 2 LeBlond universal.
10—Plain, standard makes.
6—Gooley & Edlund types A & B.
2—No. 2 Van Norman Duplex.
2—No. 4 & No. 5 Becker vertical.
2—No. 3 & No. 4 Cincinnati vert.
2—Newton spline mills.
2—Hendey prod. mills, Lincoln type
2—Beaman & Smith prod.
1—No. 2 Knight combination.
1—36" Bullard vert. boring, side hd.
1—No. 1 Lambert horizontal.

SHAPERS

3—16" G. & E. cone.
2—20" G. & E. cone.
1—20" G. & E. arranged M. D.
2—24" G. & E. cone.
1—16" Smith & Mills.
1—24" Sterling, single pulley drive.
1—32" Morton draw-cut.
1—20" Columbia (new).

DRILLS

5—2 spindle Fosdick H. S., B. B.
1—4 spindle Allen H. S., B. B.
1—4 spd. Henry & W., H. S., B. B.
1—4 spindle Avey H. S., B. B.
1—6 spindle Allen H. S., B. B.
1—1 spd. Henry & W., H. S., B. B.
2—26" Barnes Camel Bk. arr. M. D.
1—No. 17 Foote-Burt, Hvy. Duty.
1—4-spd. Barnes 26" Camel Back.
1—No. 1 Bausch mult. spdl.
1—3½' Cincinnati Bickford Radial.
1—3' Bickford Radial.
1—4' Mueller Radial.
1—3' American Sensitive Radial.
1—5' Western Mfg. Radial.
1—each Nos. 2 & 14 Colburn H. D.
1—No. 65-D 5 spdl. Moline H. D.
1—Detroit semi. auto.
1—National Acme semi. auto.
4—26" W. F. & J. Barnes.

GRINDERS

2—No. 2 B. & S. mag. chucks.
2—No. 2 B. & S. universal.
1—No. 11 B & S. plain.
2—No. 10 B. & S. plain.
3—No. 65 Heald cylinder.
2—No. 2 W. & M. surface.
2—No. 3 W. & M. surface.
1—No. 14 P. & W. vert. surface.
1—60" Reed Prentice vert. surface.
2—No. 1 LeBlond T. & C.

TURRET and AUTO LATHES

2—No. 2A W. & S.
3—No. 6A P. & J.
4—2 spindle Jones & Lamson.
2—Gisholt Simplimatics M. D.
2—No. 24 New Britain.
1—2½" Gridley 4 spdl.
3—No. 4 Bardons & Oliver.
2—No. 7 Bardons & Oliver.
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2—No. 20 Gisholt semi-auto.
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2—No. 4 W. & S. friction head.
2—No. 6 W. & S. friction head.
3—Springfield Fox Monitors.

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1—No. 24 Michigan Horn.
1—No. 409B Bliss toggle.
1—No. 68 Bliss double action.
1—No. 1-A Bliss D. A. Drawing with roll feed.
1—15 Ton Lucas Forcing.
2—Holmes Screw.
1—Stecher Screw.
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1—8" Newton Slotter.
1—24" Gray Planer.
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1—36" Niles Planer.
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1—Lees Simplex Cold Saw.
10—Air compressors.
1—2½" Landis Bolt Cutters.
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One No. 2 Brown & Sharpe Vertical Miller.
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LeBlond 14"x6', s. b. g.
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Used No. 3 Cincinnati pl., vert. att
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LATHES

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Used 14"x6' Hendey, q. c.
Used 16"x6' Hendey, q. c.
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Used 24" Mechanics, sliding head.
Used 24" Cincinnati-Bickford, s. h.
Used 25" Barnes, stationary head.
Used 26" Barnes, sliding head.
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Used 16" Mattison, back geared.
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MISCELLANEOUS

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No. 25 Cleveland Horning Pr... 300.
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No. 3 Foster Friction Head Screw Machine.
No. 5 Foster Friction Head Screw Machine.
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18"x10' Prentice grd. hd., mtr., driven.
20"x8' Monarch, d. b. g., q. c., taper attachment.
24"-27½"x14' Lodge & Shipley q. c. g., d. b. g., taper attachment.

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No. 2 Hendey universal.
No. 3 Cincinnati plain.
No. 4 Cincinnati plain.
No. 4 Cincinnati universal.

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Heald Rotary Grinder, 14" mag. chuck.
6"x18" Landis Grinder.
No. 14 Besly Disc Grinder.
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Pratt & Whitney Geared Head Lathe, 16"x8'.
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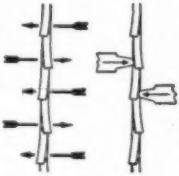

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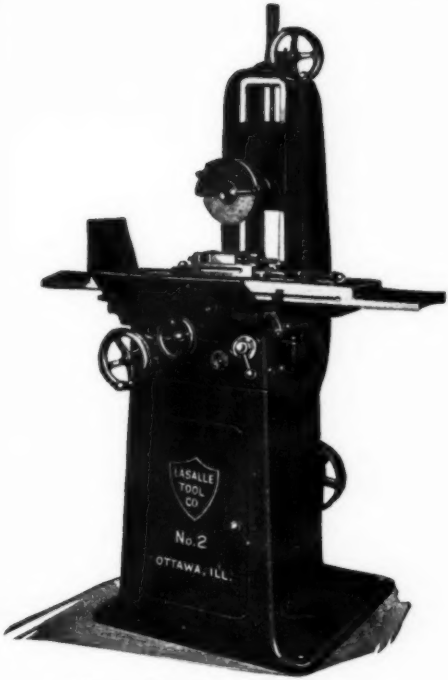

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"A Dependable Grinder"

La Salle Tool Company

Ottawa, Illinois, U. S. A.

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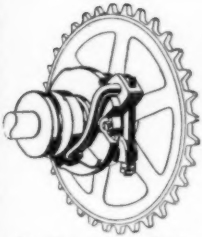
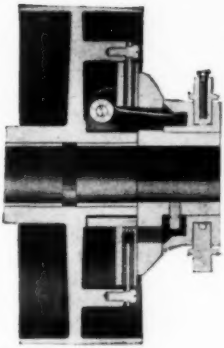


The Compression Clutch

Contracting band type for rough usage. Full floating friction band, one point accessible adjustment, easy engagement and quick release, drag free idling and surprising power capacity.



Three Principal Types of the

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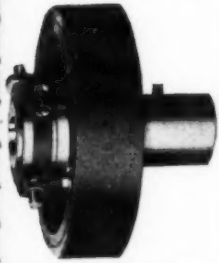


The Expansion Clutch

Full floating band type with all the features of the compression type. Has cut steel gear and pinion adjustment easily accessible. Adaptable to enclosure. Suited to external brake mounting.

A New Multiple Disc Clutch

Of superior design and construction. A disc clutch with centripital action. New in adjustment, engagement, release — simple and positive. Easily disassembled.

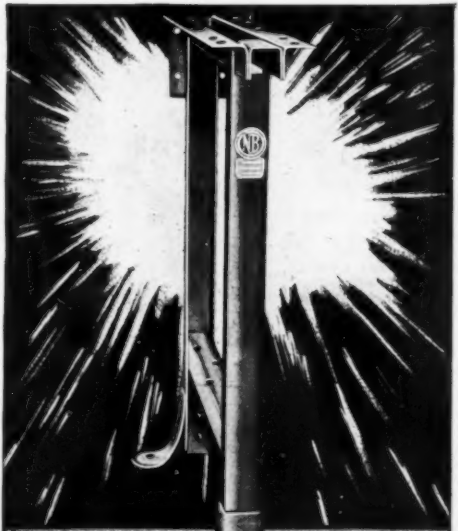
Completely enclosed, has underslung levers, interchangeable parts, perfect balance with a full length bearing and steel discs. Actuating parts chrome nickel steel, heat treated.

For developing more power in less space there's nothing like the new Conway Disc Clutch.

The Conway Clutch Co.

W. 6th St., Cincinnati, O.

One Revolution Clutch, obtainable in either compression or expansion type.
Split Clutch, the compression clutch, but designed absolutely collapsible. All parts interchangeable, removable, replaceable.
CM4, The Baby Expansion Clutch, For light machinery.



New Britain Bench Legs

A big feature—more and stiffer benching with less legs—resulting in lower bench costs. Easy to install—last forever.

The New Britain Machine Co.
New Britain, Conn.